Evaporative Emissions from In-Use Vehicles: Test Fleet Expansion (CRC E-77-2b)

Final Report

United States Environmental Protection Agency

Evaporative Emissions from In-Use Vehicles: Test Fleet Expansion (CRC E-77-2b)

Final Report

Assessment and Standards Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

Prepared for EPA by
Harold Haskew & Associates, Inc.
EPA Contract No. EP-C-07-028
Work Assignment No. 2-05

for

Southwest Research Institute

NOTICE

This technical report does not necessarily represent final EPA decisions or positions. It is intended to present technical analysis of issues using data that are currently available. The purpose in the release of such reports is to facilitate the exchange of technical information and to inform the public of technical developments.

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EVAPORATIVE EMISSIONS FROM IN-USE VEHICLES: TEST FLEET EXPANSION

FINAL REPORT

EPA Report EPA-420-R-10-025
SwRI® Project No. 03.14936.05
CRC Report CRC E-77-2b

Prepared for:

Environmental Protection Agency
26 West Martin Luther King Drive
Cincinnati, OH 45268

EPA Contract EP-C-07-028
Work Assignment 2-05

Prepared by:

Harold M. Haskew, P.E.
Thomas F. Liberty
Harold Haskew & Associates, Inc.
425 W. Huron, Suite 230
Milford, MI 48381

Reviewed and Submitted by:
Martin J. Heimrich
Southwest Research Institute

June 2010



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425 W. Huron, Suite 230
Milford, MI 48381

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Reviewed & Submitted by:

Martin J. Heimrich, Manager

Approved by:

Jeff J. White, Director

DEPARTMENT OF EMISSIONS RESEARCH AND DEVELOPMENT
ENGINE, EMISSIONS AND VEHICLE RESEARCH DIVISION

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Results and discussion given in this report relate only to the test items described in this report.

FOREWORD

This project was conducted for the US Environmental Protection Agency (EPA) under contract with Southwest Research Institute® (SwRI®). This report is submitted in fulfillment of Work Assignments 1-05 and 2-05 of EPA Contract EP-C-07-028 by Southwest Research Institute, 6220 Culebra Road, San Antonio, Texas 78238. Work Assignment 1-05 was initiated on June 28, 2008, and this project continued with Work Assignment 2-05 and was contractually completed on June 27, 2010. The program was identified within SwRI as project 03.14175.05 for Work Assignment 1-05 and as project 03.14936.05 for Work Assignment 2-05.

This report is identified by EPA as EPA-420-R-10-025.

This project was also identified by the Coordinating Research Council (CRC) as project E-77-2b. The work reported herein is a part of a continuing series of CRC E-77 evaporative emission/permeation test programs.

Harold Haskew and Associates (HH&A) was subcontracted by SwRI to lead the laboratory work under SwRI Subcontract Nos. A99099X and A99184X. The evaporative emissions and permeation emissions test work was performed at Automotive Testing Laboratory (ATL) in Mesa, Arizona.

The EPA Work Assignment Manager was Ms. Constance Hart of the Assessment and Standards Division, Office of Transportation and Air Quality, Ann Arbor, Michigan. The project contract was managed by the Department of Emissions Research and Development in the Engine, Vehicle and Emissions Research Division of SwRI, under the supervision of Mr. Jeff White, Director. Mr. Patrick Merritt managed EPA Contract EP-C-07-028, and Mr. Martin Heimrich managed Work Assignments 1-05 and 2-05. Mr. Harold Haskew of HH&A was the principal technical investigator for the project, and Mr. Gregory Barton of ATL managed the emissions test laboratory.

ABSTRACT

This report describes an ongoing investigation into the evaporative emission performance of aging light-duty vehicles. The objective of this study was to add additional data to the Coordinating Research Council's (CRC) E-77-2 evaporative emission/permeation test program. This was done to enhance the statistical power of the test program and hence the usability of the data. The sponsor selected eight vehicles for evaluation on four gasoline fuel blends spanning three levels of vapor pressure (7, 9 and 10 psi) and two levels of ethanol (zero and 10 volume percent designated as E0 and E10, respectively). The selected vehicles were prepared for test, preconditioned for a minimum of four weeks on the test fuel when the ethanol level was changed, and then subjected to the test sequence. The evaporative emission test sequence consisted of the following four parts:

- Static Permeation Rate Measurements at 86 and 105°F (Includes leak checks)
- Dynamic (Running Loss) Permeation and Canister Loss Measurement at 86°F
- Hot Soak ("True" or Net Value) following the Dynamic Test at 86°F
- Three Day Diurnal (65°F to 105°F) Permeation and Canister Loss Measurement

The E-77-2b test program was a continuation of the earlier E-77 test program. The permeation trends previously shown were again present. The small sample size and limited number of tests preclude making statements about statistical validity, but in general:

- Increasing ethanol content (0% to 10%) increased permeation in the "enhanced" vehicles tested.
- "Near zero" and "zero evap" vehicles were less sensitive (or insensitive) to ethanol level. This may be due to the permeation control materials used to achieve the lower emission levels, or perhaps the limited sample size.
- Increased fuel volatility increased permeation levels for "enhanced" vehicles.

ACKNOWLEDGEMENTS

The authors would like to recognize the many contributions made by the E-77-2b Project Panel and CRC. The E-77-2b CRC Project Panel and CRC staff are identified below:

E-77-2b CRC Project Panel

Name	*Company*
David Brzezinski	US Environmental Protection Agency
Wendy Clark	National Renewable Energy Laboratory
Dominic DiCicco	Ford Motor Company
King Eng	Shell Global Solutions (US)
Jim Frusti	Chrysler LLC
Pam Graham	Inergy Automotive
Benjamin Hancock	California Air Resources Board
Constance Hart	US Environmental Protection Agency
Phil Heirigs	Chevron Global Downstream
Jeff Jetter	Honda R&D Americas Inc.
Keith Knoll	National Renewable Energy Laboratory
John Koupal	US Environmental Protection Agency
David Lax	American Petroleum Institute
Jeffrey Long	California Air Resources Board
Hector Maldonado	California Air Resources Board
Mani Natarajan	Marathon Oil Company
David Patterson	Mitsubishi Motors R&D of America
Charles Schleyer	ExxonMobil Research & Engineering
Jenny Sigelko	Chrysler LLC
Nakia Simon	Chrysler Group LLC
James Uihlein	Chevron Global Downstream
Michael Viola	General Motors R&D Center
Ken Wright	ConocoPhillips

CRC Staff

Name	*Company*
Brent Bailey	CRC
Chris Tennant	CRC
Jane Beck	CRC

These individuals met on a regular basis throughout the program to discuss the progress and make recommendations. The Steering Committee and CRC contributed significantly to this project.

TABLE OF CONTENTS

Page

FOREWORD ii

ABSTRACT iii

ACKNOWLEDGEMENTS iv

LIST OF FIGURES vii

LIST OF TABLES viii

ACRONYMS ix

EXECUTIVE SUMMARY x

1.0 INTRODUCTION 1
1.1 Background 1
1.2 Period of Performance 2

2.0 TEST PROGRAM OVERVIEW 3
2.1 Vehicle Selection 3
2.2 Vehicle Fleet 3
2.3 Test Fuels 5
2.4 Adaption Period for Test Fuel Changes 5

3.0 DISCUSSION OF TEST RESULTS 6
3.1 Results 6
3.1.1 Static Permeation Rate (Constant Temperature (86°F)) 9
3.1.2 Static Permeation Rate (Constant Temperature (105°F)) 9
3.1.3 Dynamic (Running Loss) Permeation 10
3.1.4 Hot Soak ("True Hot Soak") Permeation Rate 11
3.1.5 Diurnal Permeation Performance 12
3.1.6 Temperature Impact on Steady-State Permeation 15
3.1.7 Special Cases: Fuel System Leak under Pressure 15
3.1.8 Carbon Canister Breakthrough 19
3.2 Speciation 20
3.3 Reactivity 21
3.4 Summary of Findings and Results 28
3.5 Looking Ahead 28

TABLE OF CONTENTS (CONT'D)

APPENDICES **No. of Pages**

A - E-77 TEST CONCEPT AND THEORY 5
B - TEST PROCEDURES 9
C - FUEL INSPECTIONS 2
D - SUMMARY OF E-77-2b PROGRAM TEST RESULTS AND INDIVIDUAL VEHICLE EVAPORATIVE TEST RESULTS.....29
E - COMPLETE SPECIATION RESULTS – ALL E-77-2b VEHICLES 262

LIST OF FIGURES

Figure		Page
1	Period of Performance	2
2	86°F Static Performance	9
3	105°F Static Performance	10
4	Running Loss Performance	11
5	True Hot Soak Performance	12
6	Day One Diurnal Performance	13
7	Day Two Diurnal Performance	13
8	Day Three Diurnal Performance	14
9	Total (3 Day) Diurnal Performance	14
10	Temperature Effect on Static Permeation	15
11	Vehicle 220b Static Performance	16
12	Vehicle 221b Static Performance	16
13	Canister Breakthrough	19

LIST OF TABLES

Table		Page
1	E-77-2b Fleet Composition	3
2	E-77 Composite Fleet – All Programs	4
3	Test Fuel Target Values	5
4	Enhanced Evap (Tier 1) Certified Data	7
5	Near Zero (Tier 2) Evap Certified Data	8
6	Zero Evap Certified Data	8
7	Vehicle 220b Data Summary	17
8	Vehicle 221b Data Summary	18
9	Speciation Results – Vehicle 210c – 72-Hour Diurnal Test	20
10	Mass Sorted Speciation Results – Vehicle 210c – 72-Hour Diurnal Test	21
11	Reactivity Results	23
12	Vehicle Reactivity Summaries – Vehicle 206b	24
13	Vehicle Reactivity Summaries – Vehicle 208b	24
14	Vehicle Reactivity Summaries – Vehicle 209b	25
15	Vehicle Reactivity Summaries – Vehicle 210b	25
16	Vehicle Reactivity Summaries – Vehicle 213b	26
17	Vehicle Reactivity Summaries – Vehicle 220b	26
18	Vehicle Reactivity Summaries – Vehicle 221b	27
19	Vehicle Reactivity Summaries – Vehicle 222b	27

ACRONYMS

API .....American Petroleum Institute
ARB .....California Air Resources Board
ASTM .....ASTM International – a standards organization
ATL.....Automotive Testing Laboratory, Inc.
AQIRP.....Air Quality Improvement Research Program (Auto/Oil)
CAS.....Chemical Abstract Service
CFR.....Code of Federal Regulations
CRC.....Coordinating Research Council, Inc.
CVS.....Constant Volume Sampler
DHB .....Diurnal Heat Build
DVPE .....Dry Vapor Pressure Equivalent
EPA .....(US) Environmental Protection Agency
FID .....Flame Ionization Detector
FTTP .....Fuel Tank Temperature Profile
GC .....Gas Chromatograph
HC .....Hydrocarbon
HH&A.....Harold Haskew & Associates
LA-92.....Unified Driving Cycle
MIR .....Maximum Incremental Reactivity
MOVES.....Motor Vehicle Emissions Simulator – EPA model to simulate emissions from mobile sources
MTBE .....Methyl Tertiary Butyl Ether
NBR .....Nitrile Rubber or Acrylonitrile Butadiene Rubber
OBD2 .....On-Board Diagnostics Level 2
ORVR .....Onboard Refueling Vapor Recovery
PFI.....Port Fuel Injection
psi.....Pounds per Square Inch
PZEV.....Partial Zero Emission Vehicle (California)
RL SHED.....Running Loss Sealed Housing for Evaporative Determination
RVP.....Reid Vapor Pressure
SAE .....Society of Automotive Engineers
SHED .....Sealed Housing for Evaporative Determination
SwRI .....Southwest Research Institute
TEFVO.....Transient Emission Following Vehicle Operation (True Hot Soak)
THC.....Total Hydrocarbon
VOC .....Volatile Organic Compound
VT SHED.....Variable Temperature Sealed Housing for Evaporative Determination

EXECUTIVE SUMMARY

This report describes an ongoing investigation into the evaporative emission performance of aging light-duty vehicles. Evaporative emissions are, in this context, the fuel-related emissions that escape from the vehicle at rest and during vehicle operation (omitting those that come from the tailpipe). The CRC E-77-2b Evaporative Emission Test Program, the subject of this report, evolved from the "CRC E-77 Pilot Study" and the recently published CRC E-77-2 report, "Enhanced Evaporative Emissions Vehicles." This series of studies used test procedures and insight borrowed from other CRC test programs, including E-65, "Fuel Permeation from Automotive Systems."

The objective of this study was to add additional data to the Coordinating Research Council's (CRC) E-77-2 permeation test program. This was done to enhance the statistical power of the test program and hence the usability of the data. The sponsor selected eight vehicles for evaluation on four gasoline fuel blends spanning three levels of vapor pressure (7, 9 and 10 psi) and two levels of ethanol (zero and 10 volume percent designated as E0 and E10, respectively). The selected vehicles were prepared for test, preconditioned for a minimum of four weeks on the test fuel when the ethanol level was changed, and then subjected to the test sequence. The evaporative emission test sequence consisted of the following four parts:

- Static Permeation Rate Measurement at 86°F and 105°F (Includes leak checks)
- Dynamic (Running Loss) Permeation and Canister Loss Measurement at 86°F
- Hot Soak ("True" or Net Value) following the Dynamic Test at 86°F
- Three Day Diurnal (65°F to 105°F) Permeation and Canister Loss Measurement

Eight vehicles, each selected to represent a high volume nationwide model, were tested under this work assignment:

- Five of the vehicles were owned by CRC and were approved for use in this test program. They include: 2002 Nissan Altima, 2002 Chevy Trailblazer, 2004 Chrysler Stratus, 2004 Chevy Impala, and 2004 Dodge Ram Pickup.
- Three vehicles were leased for the duration of the testing. The vehicle types were two enhanced evaporative emission certified models (2000 Chevrolet Malibu, and 2000 Mitsubishi Galant) and one PZEV (2004 Ford Focus).

Each vehicle started the evaluation with a four week preconditioning on 10 psi E10 fuel, and then ran the 10 psi E10 evaporative emission test sequence (static, running loss, hot soak, and diurnal). The four week period is thought to be appropriate for the permeation rate to re-stabilize following the fuel change. After validation and committee approval of these data, the fuel was changed to a lower vapor pressure (7 psi) E10 fuel, allowed to re-stabilize for up to one week, and then re-evaluated on the emission test sequence. The shorter stabilization period is thought appropriate to allow the system to respond to a fuel with equivalent ethanol content but lower vapor pressure.

The fuel comparisons selected for this project were two levels of ethanol content with vapor pressure varied as listed on the following page.

TEST FUEL TARGET VALUES

Fuel	Reid Vapor Pressure
E0	7 psi, 9 psi
E10	7 psi, 10 psi

It seemed logical to combine as much of the previous E-77 data with the newly gathered data into the discussion of results as possible. The "enhanced emission" vehicles gave, on average, increasing permeation rates with increasing volatility and with increasing ethanol level. The small sample of “near zero” emission vehicles did not indicate the same trend, except for the diurnal test results. The authors suggest that this might be due to the permeation emission control materials used in the newer vehicles, or it may be an artifact of the smaller sample size.

The project plan included the “speciation” of the evaporative emission results for each of the vehicles and test fuels. A sample of the ambient hydrocarbon (HC) concentration in the VT-SHED was collected in a Tedlar™ bag during each test, and later analyzed for HC species using the laboratory’s Varian™ chromatograph, and the “Auto-Oil Test Procedure.” The results of this “speciation” allowed the calculation of the average reactivity of the permeate for each of the vehicles and fuels.

The E-77-2b test program was a continuation of the earlier E-77 test program which added eight vehicles to be tested on four fuels to increase the size of the knowledge base. The permeation trends previously shown were again present. The small sample size and limited number of tests preclude making statements about statistical validity, but in general:

- Increasing ethanol content (0% to 10%) increased permeation in the "enhanced" vehicles tested.
- "Near zero" and "zero evap" vehicles were less sensitive (or insensitive) to ethanol level. This may be due to the materials used to achieve the lower emission levels, or perhaps the limited sample size.
- Increased fuel volatility increased permeation levels for "enhanced" vehicles.
- The lower emitting "near zero" and "zero evap" vehicles did not exhibit a clear trend with increasing volatility level. Again, this may be due to the permeation control materials used for the vehicles tested, or the small sample size.
- "Near zero" and "zero evap" vehicles had lower emissions than the "enhanced" vehicles.
- The two vehicles identified with "leaks" were not included in the analysis for the permeation trends, but were interesting in that they may suggest deterioration with time for the vehicles at eight or more years of age.

1.0 INTRODUCTION

1.1 Background

This report describes an ongoing investigation into the evaporative emission performance of aging light-duty vehicles. Evaporative emissions are, in this context, the fuel-related emissions that escape from the vehicle at rest and during vehicle operation (omitting those that come from the tailpipe). The CRC E-77-2b Evaporative Emission Test Program, the subject of this report, evolved from the "CRC E-77 Pilot Study" and the recently published CRC E-77-2 report, "Enhanced Evaporative Emissions Vehicles." This series of studies used test procedures and insight borrowed from other CRC test programs, including E-65, "Fuel Permeation from Automotive Systems." Three reports preceded this study:

- A New Approach to Modeling On-Road Vehicle Evaporative Emissions
  (A report to EPA by HH&A - Measure "Mechanisms" June 2, 2005)

- Vehicle Evaporative Emission Mechanisms: A Pilot Study - CRC E-77
  (Ten Vehicle Concept Demonstration - Published June 24, 2008)

- Enhanced Evaporative Emission Vehicles - CRC E-77-2
  (Eight vehicle continuation of the pilot study – Published April 9, 2010)

The test work for all these programs was conducted at the Automotive Testing Laboratory, Inc. (ATL) facilities in Mesa, AZ[1], where unique experience and facilities exist to conduct evaporative emission programs of this nature.

The objective of this study was to add additional data to the Coordinating Research Council (CRC) E-77-2 permeation test program. This was done to enhance the statistical power of the test program and hence the usability of the data. The sponsor selected eight vehicles for evaluation on four gasoline fuel blends spanning three levels of vapor pressure (7, 9 and 10 psi) and two levels of ethanol (zero and 10 volume percent designated as E0 and E10, respectively). The selected vehicles were prepared for test, preconditioned for a minimum of four weeks on the test fuel when the ethanol level was changed, and then subjected to the test sequence. The evaporative emission test sequence consisted of the following four parts:

- Static Permeation Rate Measurement at 86°F and 105°F (Includes leak checks)
- Dynamic (Running Loss) Permeation and Canister Loss Measurement at 86°F
- Hot Soak ("True" or Net Value) following the Dynamic Test at 86°F
- Three Day Diurnal (65°F to 105°F) Permeation and Canister Loss Measurement

While the main objective of this project was to measure the evaporative emission performance of the selected vehicles, a second objective was to develop and refine the test procedures and analysis methods. We have included comprehensive documentation of these test procedures in Appendix A (E-77 Test Concept and Theory) and Appendix B (Test Procedures).

[1] ATL, 263 S. Mulberry Street, Mesa, AZ (480) 649 7906, www.ATL-AZ.com, Greg Barton, President

Each vehicle started the evaluation with a four week preconditioning on 10 psi E10 fuel, and then ran the 10 psi E10 evaporative emission test sequence (static, running loss, hot soak, and diurnal). The four week period is thought to be appropriate for the permeation rate to re-stabilize following the fuel change. After validation and committee approval of these data, the fuel was changed to a lower vapor pressure (7 psi) E10 fuel, allowed to re-stabilize for up to one week, and then re-evaluated on the emission test sequence. The shorter stabilization period is thought appropriate to allow the system to respond to a fuel with equivalent ethanol content but lower vapor pressure.

Once the ethanol fuel test results were approved, the vehicle was refueled with 9 psi E0 fuel, and again subjected to a four week minimum re-stabilization. The evaporative performance test sequence was then repeated, and repeated again with a 7 psi E0 fuel after a one week stabilization period.

1.2 Period of Performance

The vehicle emission testing started during the week of November 17, 2008. Procedural errors were identified, and the data was discarded. The vehicle testing was restarted in January 2009 with procedural corrections, and continued through October of 2009. No erroneous data were included in the project data set. The period of performance by vehicle number is given in Figure 1. Fifty-four (54) weekly progress reports were made.

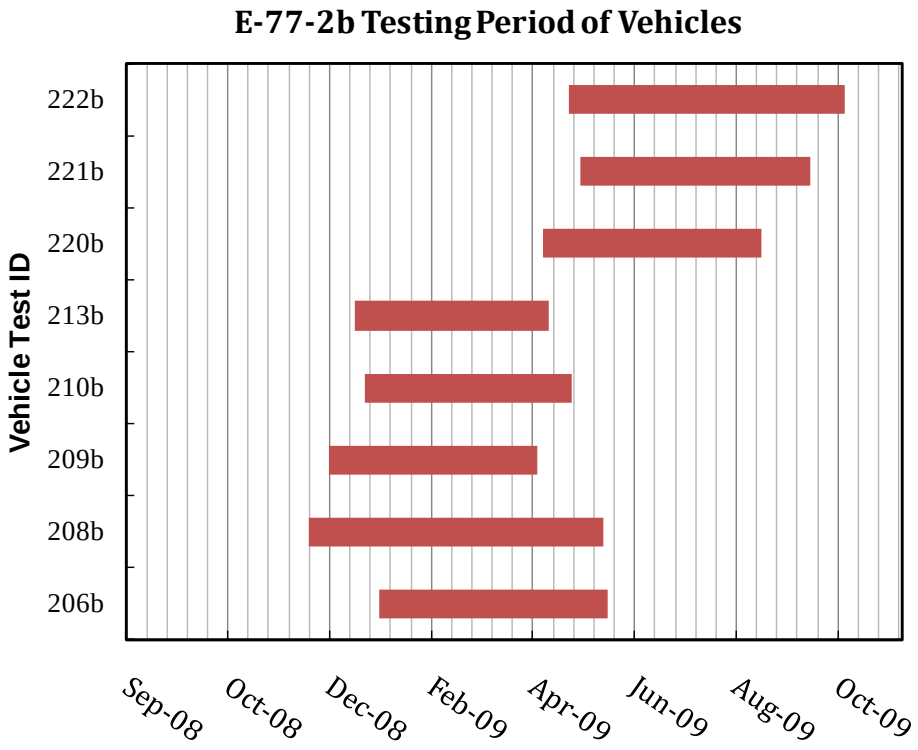


FIGURE 1. PERIOD OF PERFORMANCE

2.0 TEST PROGRAM OVERVIEW

2.1 Vehicle Selection

Eight vehicles, each selected to represent a high volume nationwide model, were tested under this work assignment:

- Five of the vehicles were owned by CRC and were approved for use in this test program. They include: 2002 Nissan Altima, 2002 Chevy Trailblazer, 2004 Chrysler Stratus, 2004 Chevy Impala, and 2004 Dodge Ram Pickup.

- Three vehicles were leased for the duration of the testing. The vehicle types were two enhanced evaporative emission certified models (2000 Chevrolet Malibu, and 2000 Mitsubishi Galant) and one PZEV[2] (2004 Ford Focus).

All candidate vehicles for this program received a thorough inspection before beginning the test preparation sequence. This included inspection of the engine, transmission, axles, exhaust system and tires, and verification that no OBD2 faults were present.

Each candidate vehicle was checked at the start of the test program to make sure that there were no system leaks, to verify system purge was present, and to generally establish that the vehicles were safe to operate. Each vehicle had to be registered and insured for road operation to accomplish the many road preconditioning drives.

2.2 Vehicle Fleet

Table 1 below lists and describes the eight vehicles studied in this program. The odometers (Odo.) in the following tables are the indicated odometer readings at the time of the vehicle's initial inspection into the testing program.

TABLE 1. E-77-2b FLEET COMPOSITION

Veh No.	Yr	Make	Model	Odo.	Evap Family	Evap Standards (all are ORVR)	Tank Size	Fuel Tank Plastic Metal
220b	2000	Chevrolet	Malibu	69,367	YGMXR0124919	Tier 1	14.2	Plastic
221b	2000	Mitsubishi	Galant ES	97,875	YDSXR0165A1F	Tier 1	16.3	Plastic
206b	2002	Nissan	Altima	110,399	2NSXR0120RCB	Tier 1	20.0	Plastic
208b	2002	Chevrolet	Trailblazer	60,233	2GMXR0175922	Tier 1	18.6	Plastic
209b	2004	Chrysler	Stratus	63,778	4CRXR0130GBA	Tier 1	16.0	Plastic
210b	2004	Chevrolet	Impala	63,157	4GMXR0124919	Near Zero	17.0	Plastic
213b	2004	Dodge	Ram 1500	99,372	4CRXR0218GDH	Near Zero	35.0	Plastic
222b	2004	Ford	Focus ZX3	71,633	4FMXR0120GCX	Zero Evap	14.0	Metal

[2] Partial Zero Emission Vehicle – a California certification class with very low exhaust emission and a "zero evaporative emission system."

As stated previously, the E-77-2b program added eight vehicles to the E-77 program database. Table 2 below lists the "composite E-77 vehicle fleet," sorted by vehicle model year, with the 2b vehicles highlighted in light blue. Not all data from the composite fleet are usable for later analysis, as the use of the INNOVA analyzer for identification of methanol and refrigerant (R-134a) leaks did not become available until the latter part of the Pilot Program. Pre INNOVA data tests that were not used in the analysis are indicated with the yellow shading.

TABLE 2. E-77 COMPOSITE FLEET – ALL PROGRAMS

E-77 Composite Fleet - All Programs

Veh No.	Yr	Make	Model	Odo.	Evap Family	Evap Standards	Tank Size gal.	Fuel Tank Plastic Metal
003	1992	Honda	Accord	71,129	92FG	Tier 0	17.0	Metal
010	1992	Toyota	Camry	162,838	EV-E	Tier 0	18.5	Metal
009	1995	Plymouth	Neon	106,220	SCR1050AYM02	Tier 0	11.2	Metal
001	1996	Chevrolet	S-10	68,420	TGM1082AYMEA	Tier 1	19.0	Metal
006	1996	Chevrolet	Cavalier	112,768	TGM1089AYMEA	Tier 1	15.3	Metal
007	1996	Chevrolet	Cavalier	113,125	TGM1089AYMEA	Tier 1	15.3	Metal
008	1996	Ford	Explorer	114,822	TFM1120AYMED	Tier 1	21.0	Metal
202b	1996	Ford	Taurus	86,538	TFM1115AYMEB	Tier 1	16.0	Metal
216b	1996	Ford	Taurus	88,820	TFM1115AYMEB	Tier 1	16.0	Metal
004	1999	Dodge	Grand Caravan SE	98,765	XCRXE0101G2A	Tier 0	20.0	Plastic
204b	1999	Honda	Accord	100,418	XHNX**R**0130AAA	Tier 1	17.1	Metal
002	2000	Toyota	Tacoma	80,557	YTYXE0095AE0	Tier 1	15.1	Metal
220b	2000	Chevrolet	Malibu	69,367	YGMXR0124919	Tier 1	14.2	Plastic
221b	2000	Mitsubishi	Galant ES	97,875	YDSXR0165A1F	Tier 1	16.3	Plastic
205b	2001	Toyota	Corolla	92,047	1TYX**R**0115AK1	Tier 1	13.2	Metal
207b	2001	Dodge	Caravan	92,740	1CRX**R**0165XAA	Tier 1	20.0	Plastic
206b	2002	Nissan	Altima		2NSX**R**0120RCB	Tier 1	20.0	Plastic
208b	2002	Chevrolet	Trailblazer	60,233	2GMX**R**0175922	Tier 1	18.6	Plastic
209b	2004	Chrysler	Stratus	63,778	4CRX**R**0130GBA	Tier 1	16.0	Plastic
210b	2004	Chevrolet	Impala	63,157	4GMX**R**0124919	Tier 2	17.0	Plastic
211b	2004	Toyota	Camry LE	43,588	4TYX**R**0130A11	Tier 2	18.5	Plastic
213b	2004	Dodge	Ram 1500	99,372	4CRX**R**0218GDH	Tier 2	35.0	Plastic
214b	2004	Ford	Escape	40,188	4FMX**R**0110BBE	Tier 2	16.0	Plastic
215b	2004	Toyota	High Lander	88,693	4TYX**R**0165PZ1	Tier 2	19.1	Plastic
222b	2004	Ford	Focus ZX3	71,633	4FMXR0120GCX	Zero Evap	14.0	Metal
212b	2006	Ford	Taurus	28,354	6FMX**R**0185GAK	Tier 2	18.0	Metal
005	2007	Ford	Taurus	6,916	7FMXR0185GAR	Tier 2	18.0	Metal

Light blue – E-77-2b program vehicles
Yellow – Pre-INNOVA tests not used in the analysis

2.3 Test Fuels

The fuel comparisons selected for this project were two levels of ethanol content with vapor pressure varied as listed in Table 3.

TABLE 3. TEST FUEL TARGET VALUES

	7 psi	9 psi	10 psi
E0	X	X	
E10	X		X

CRC had fuels remaining from Project E-74 in quantities sufficient to conduct this program, e.g., 7 psi E0 and E10. Inspection records of the base fuels are located in Appendix C, using their E-74b identifications, fuels 6 and 7, respectively. The nominal 7 psi fuels, both E0 and E10, were locally blended with commercial butane to make the higher volatility 9 psi E0, and the 10 psi E10. The blends were done in drum batches, approximately 50 gallons at a time, by adding small amounts of butane, circulating for a brief period, then sampling and determining the new volatility with a "Grabner"[3] instrument, using test procedures described in ASTM D5191. The higher (10 psi instead of 9 psi) vapor pressure of the E10 fuel was specified because many localities permit "splash blending" of ethanol to gasoline and allow a 1 psi exemption for their vapor pressure limits.

2.4 Adaption Period for Test Fuel Changes

Many areas of the United States were required to use an oxygenated fuel to improve vehicle emissions, especially during the summer season. While Methyl Tertiary Butyl Ether (MTBE) was the most common oxygenate, ethanol was also used. Project E-65 demonstrated that the permeation of vehicle fuel systems increased with the use of fuels containing ethanol, compared to fuels with MTBE, or no oxygenate. Project E-65 also demonstrated that if ethanol had been previously used, and the fuel replaced with a non-ethanol blend, it could take two to four weeks for the ethanol increase to dissipate (the "ethanol carry-over effect").

The protocols adopted for this test program were to require a minimum of four weeks of vehicle exposure to a new fuel when first introducing ethanol to the vehicle, and the same period of time when moving to an ethanol-free (E0) fuel.

[3] www.grabner-instruments.com, MINIVAP VPS / VPSH Vapor Pressure Tester. The portable MINIVAP VPS and VPSH vapor pressure testers are the worldwide accepted standard instruments for the determination of the vapor pressure of gasoline according to ASTM D5191, ASTM D6377, ASTM D6378 and EN 13016 1+2.

3.0 DISCUSSION OF TEST RESULTS

3.1 Results

The results from the E-77-2b vehicle tests are summarized in Appendix D. It seemed logical to combine as much of the previous E-77 data with the newly gathered data into the discussion of results as possible. Not all of the data were comparable, and the following summary is offered to explain the various choices.

- While not part of the contracted E-77 Pilot Study, the laboratory found that the vehicle tests needed to be corrected for the presence of the non-fuel contributors methanol and the refrigerant R134a. The INNOVA analyzer that the laboratory purchased and used to make these corrections was not available for testing until vehicle 006. Of the remaining vehicles tested, only 006 and 008 were Tier 1 models (vehicle 007 was an implanted leak test, and vehicles 009 and 010 were pre-enhanced, Tier 0 models). The Pilot Study only ran a one day diurnal, rather than the three day test that became the norm.

- The 105ºF static tests were first introduced in the E-77-2b test sequence to enhance the evidence that permeation is directly affected by temperature. The earlier test programs did not have that information.

Emission results are presented below for each of the four evaporative emission elements (static, running loss, hot soak and diurnal), with data averaged for selected and representative vehicles tested in the E-77, E-77-2 and E-77-2b programs that were tested on the four fuels used in this (2b) study. A list of the data used in the following plots is tabulated in Tables 4, 5, and 6.

TABLE 4. ENHANCED EVAP (Tier 1) CERTIFIED DATA

Veh.	Fuel	86 Static mg/hr	105 Static mg/hr	RL mg/hr	Tru-HS mg/hr	Diurnal Emissions- mg Day 1	Day 2	Day 3	Total	
06	7E0	---	---	---	---	375.6	---	---	---	
	9E0	---	---	---	---	468.5	---	---	---	E-77
08	7E0	---	---	---	---	133.1	---	---	---	
	9E0	---	---	---	---	150.4	---	---	---	
204	10E10	84.3	---	316.4	0.4	1547.9	1779.9	1771.1	5099.0	
	7E10	66.4	---	287.9	29.7	1260.2	1165.2	1165.2	3590.6	
	9E0	33.8	---	249.2	44.3	628.3	581.0	577.0	1786.4	
	7E0	12.9	---	222.6	18.7	367.2	287.7	293.6	948.5	
205	10E10	41.6	---	191.6	29.5	1794.1	1730.9	1741.7	5266.6	
	7E10	59.6	---	232.8	71.9	1783.4	1715.0	1523.9	5022.3	
	9E0	19.5	---	103.1	1.0	499.5	481.0	507.2	1487.8	
	7E0	9.9	---	67.1	0.0	383.0	365.4	367.0	1115.4	
207	10E10	78.7	---	858.1	237.7	1406.4	1264.4	1223.7	3894.5	
	7E10	64.4	---	812.2	122.2	1086.5	812.0	823.6	2722.0	
	9E0	32.5	---	833.9	5.8	406.4	337.3	308.0	1051.7	E-77-2
	7E0	40.1	---	842.5	0.0	397.5	302.6	268.9	969.1	
214	10E10	24.4	---	133.1	57.4	492.0	839.4	11373.8	12705.2	
	7E10	23.9	---	105.7	32.9	524.2	397.4	394.4	1315.9	
	9E0	10.7	---	96.7	52.1	455.9	358.5	1101.7	1916.1	
	7E0	25.2	---	36.3	3.3	494.3	319.0	281.5	1094.8	
215	10E10	10.4	---	71.9	1.6	319.2	260.2	237.0	816.4	
	7E10	12.2	---	97.9	0.0	224.7	231.7	267.5	724.0	
	9E0	8.5	---	81.1	25.1	202.1	165.9	176.3	544.3	
	7E0	8.7	---	79.7	22.5	248.3	294.1	288.8	831.1	
206b	10E10	124.9	314.1	546.5	165.1	2776.6	31004.6	43028.2	76809.3	
	7E10	149.3	307.9	436.7	174.9	2582.6	2258.5	2144.0	6985.0	
	9E0	61.1	178.8	365.6	102.5	1500.0	1285.6	1250.8	4036.4	
	7E0	52.0	118.1	245.1	68.8	1171.9	931.2	890.3	2993.3	
208b	10E10	37.5	61.2	329.5	36.0	795.0	561.4	495.8	1852.2	
	7E10	27.2	51.8	254.7	77.3	780.6	510.4	449.4	1740.5	
	9E0	37.2	55.0	228.0	37.9	778.0	567.2	519.4	1864.6	E-77-2b
	7E0	24.8	64.5	124.9	75.0	422.1	419.4	476.0	1317.5	
209b	10E10	28.8	73.3	323.6	113.7	535.5	423.5	475.5	1434.5	
	7E10	28.6	54.1	205.7	24.5	383.1	349.1	323.5	1055.7	
	9E0	23.4	29.5	144.4	5.0	327.8	250.5	224.3	802.6	
	7E0	16.8	28.8	166.2	16.8	354.1	249.7	218.1	821.9	

Average Values for the Tier 1 Vehicle Tests

Fuel	86 Static mg/hr	105 Static mg/hr	RL mg/hr	Tru-HS mg/hr	Diurnal Emissions- mg Day 1	Day 2	Day 3	Total
7psi E0	23.8	70.5	223.1	25.6	434.7	396.1	385.5	1261.4
9psi E0	28.3	87.8	262.7	34.2	541.7	503.4	583.1	1686.2
7psi E10	54.0	137.9	304.2	66.7	1078.2	929.9	886.4	2894.5
10psi E10	53.8	149.5	346.3	80.2	1208.3	4733.0	7543.4	13484.7

TABLE 5. NEAR ZERO (Tier 2) EVAP CERTIFIED DATA

Veh.	Fuel	86 Static mg/hr	105 Static mg/hr	RL mg/hr	Tru-HS mg/hr	Diurnal Emissions- mg Day 1	Day 2	Day 3	Total	
211	10E10	19.9		138.3	0.0	337.0	226.8	217.9	781.6	
	7E10	9.4		56.3	13.8	243.8	183.8	184.3	611.9	
	9E0	10.1		83.7	15.3	130.3	115.8	100.6	346.7	
	7E0	9.1		104.6	0.7	207.1	100.2	87.4	394.7	E-77-2
212	10E10	10.6		148.9	0.0	124.3	87.9	102.8	315.1	
	7E10	21.8		201.2	0.0	184.8	100.2	75.8	360.8	
	9E0	3.2		115.8	0.4	100.5	70.8	57.4	228.7	
	7E0	0.9		184.5	1.8	101.6	71.2	57.0	229.7	
210b	10E10	19.9	70.1	147.5	60.6	486.5	458.3	441.3	1386.1	
	7E10	29.9	51.9	218.3	61.8	445.1	388.3	359.1	1192.5	
	9E0	21.2	33.5	171.1	19.8	407.8	377.4	358.3	1143.4	
	7E0	18.7	35.5	216.0	49.0	270.6	266.6	221.1	758.3	E-77-2b
213b	10E10	39.2	106.8	130.9	0.9	650.6	615.4	700.7	1966.7	
	7E10	29.6	82.2	243.1	60.5	602.8	577.7	588.9	1769.4	
	9E0	14.7	34.5	203.1	14.5	346.3	328.4	292.8	967.5	
	7E0	21.1	35.3	135.1	12.2	357.8	283.3	276.5	917.5	

Average Values for Tier 2 Vehicle Tests

Fuel	86 Static mg/hr	105 Static mg/hr	RL mg/hr	Tru-HS mg/hr	Diurnal Emissions- mg Day 1	Day 2	Day 3	Total
7psi E0	12.5	35.4	160.1	15.9	234.2	180.3	160.5	575.1
9psi E0	12.3	34.0	143.4	12.5	246.2	223.1	202.3	671.6
7psi E10	22.7	67.0	179.7	34.0	369.1	312.5	302.0	983.6
10psi E10	22.4	88.4	141.4	15.4	399.6	347.1	365.7	1112.4

TABLE 6. ZERO EVAP CERTIFIED DATA

Veh.	Fuel	86 Static mg/hr	105 Static mg/hr	RL mg/hr	Tru-HS mg/hr	Diurnal Emissions- mg Day 1	Day 2	Day 3	Total	
222b	7E0	3.38	6.36	128.79	5.44	58.6	39.0	38.8	136.4	
	9E0	3.10	5.75	45.55	0.00	77.4	41.9	57.9	177.2	E-77-2b
	7E10	12.10	16.29	61.68	0.00	99.6	104.0	84.0	287.6	
	10E10	3.75	7.36	73.08	0.0	104.1	79.7	73.4	257.2	

An observation is present in the following analysis. The "enhanced emission" vehicles gave, on average, increasing permeation rates with increasing volatility and with increasing ethanol level. The small sample of “near zero” emission vehicles did not indicate the same trend, except for the diurnal test results. The authors suggest that this might be due to the permeation control materials used in the newer vehicles, or it may be an artifact of the smaller sample size.

3.1.1 Static Permeation Rate (Constant Temperature (86°F))

Average permeation rates are compared by fuel specification for three vehicle groups: “enhanced,” “near zero,” and “zero evap” evaporative emissions.

Figure 2 shows the 86ºF static permeation rate performance for the average of eight “enhanced” and four “near zero” vehicles tested on the four fuels in this test program. This composite result confirms the trend shown in the earlier programs of increasing permeation rate with increasing ethanol content and increasing vapor pressure of the fuel. The “zero evap” vehicle is shown only for reference. Due to a sample size of only one, no statistical significance can be implied.

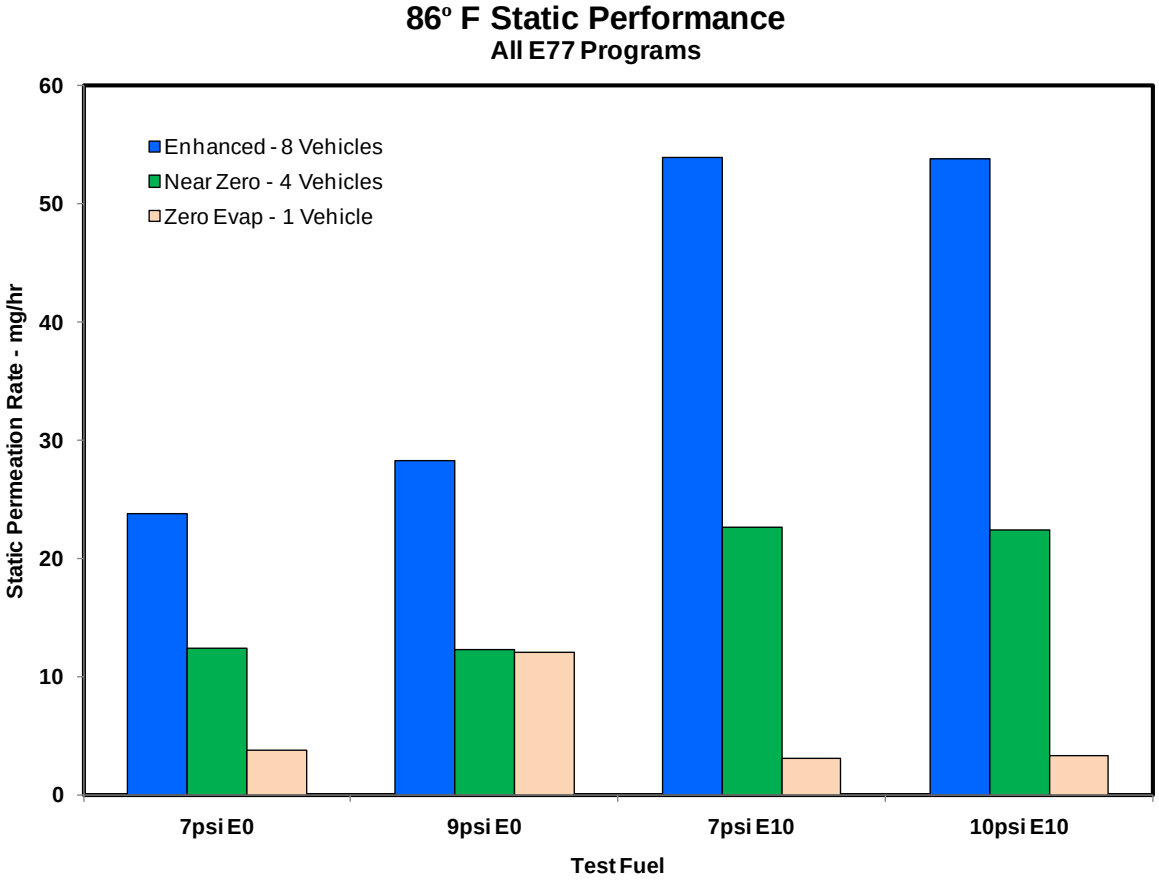


FIGURE 2. 86°F STATIC PERFORMANCE

3.1.2 Static Permeation Rate (Constant Temperature (105°F))

Average permeation rates are compared by fuel specification for two vehicle groups: “enhanced” and the “near zero” evaporative emissions at an elevated test temperature (105ºF).

Figure 3 shows the 105ºF static permeation rate performance for the average of three "enhanced" and two "near zero" vehicles tested on the four fuels in this test program. Again, this composite result confirms the trends shown in the earlier programs of increasing permeation rate with increasing ethanol content and increasing vapor pressure of the fuel for the enhanced vehicles, albeit at a higher test temperature. The "zero evap" vehicle is shown for reference.

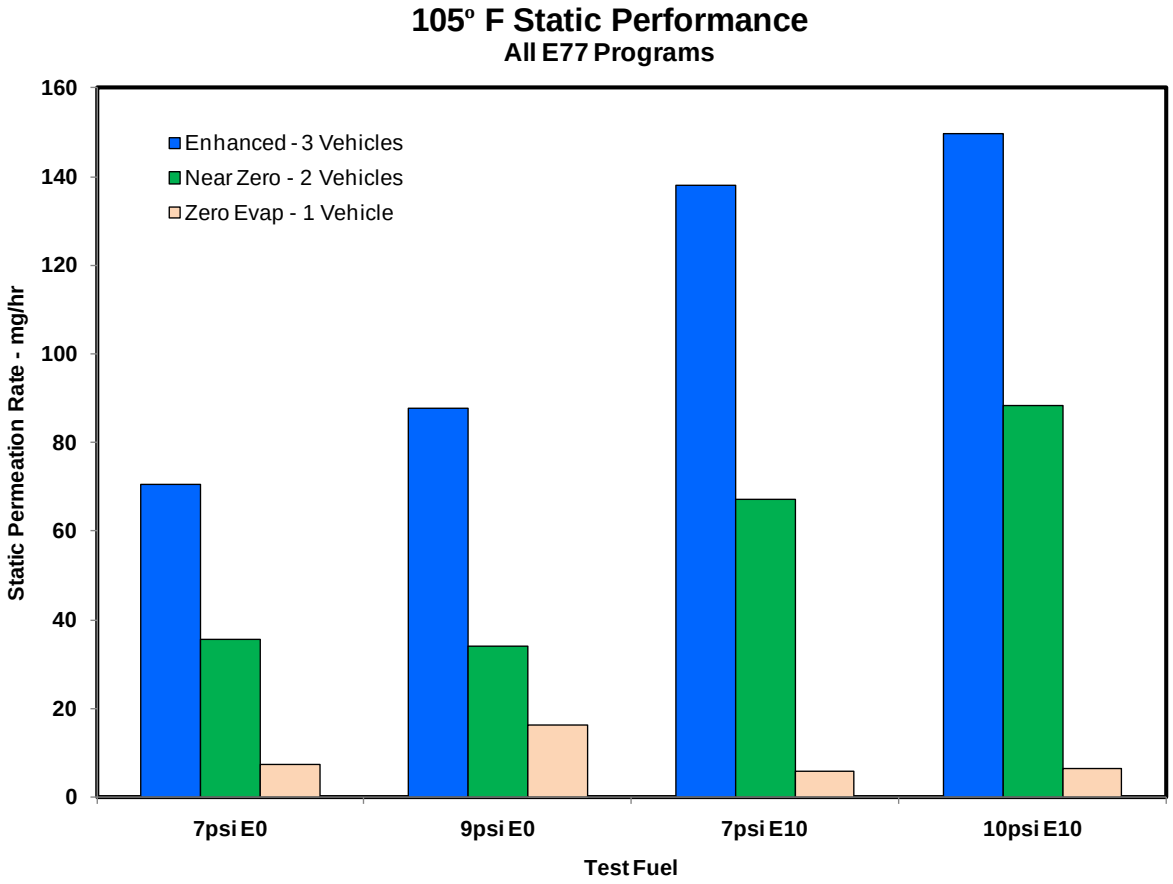


FIGURE 3. 105°F STATIC PERFORMANCE

3.1.3 Dynamic (Running Loss) Permeation

In a similar presentation, Figure 4 shows the average "Running Loss" permeation rate for the vehicle types and the fuels tested. "Running Loss" permeation as described here is the permeation measured during a "cold start" 48-minute drive in a Running Loss Sealed Housing for Evaporative Determination (RL-SHED) at 86°F.

Figure 4 presents the running loss permeation rates for eight "enhanced" and four "near zero" vehicles tested. The "enhanced" vehicles displayed a similar increase in permeation with ethanol content and vapor pressure as was seen in the static tests, but the "near zero" vehicles appear to be insensitive within the small sample size available (4).

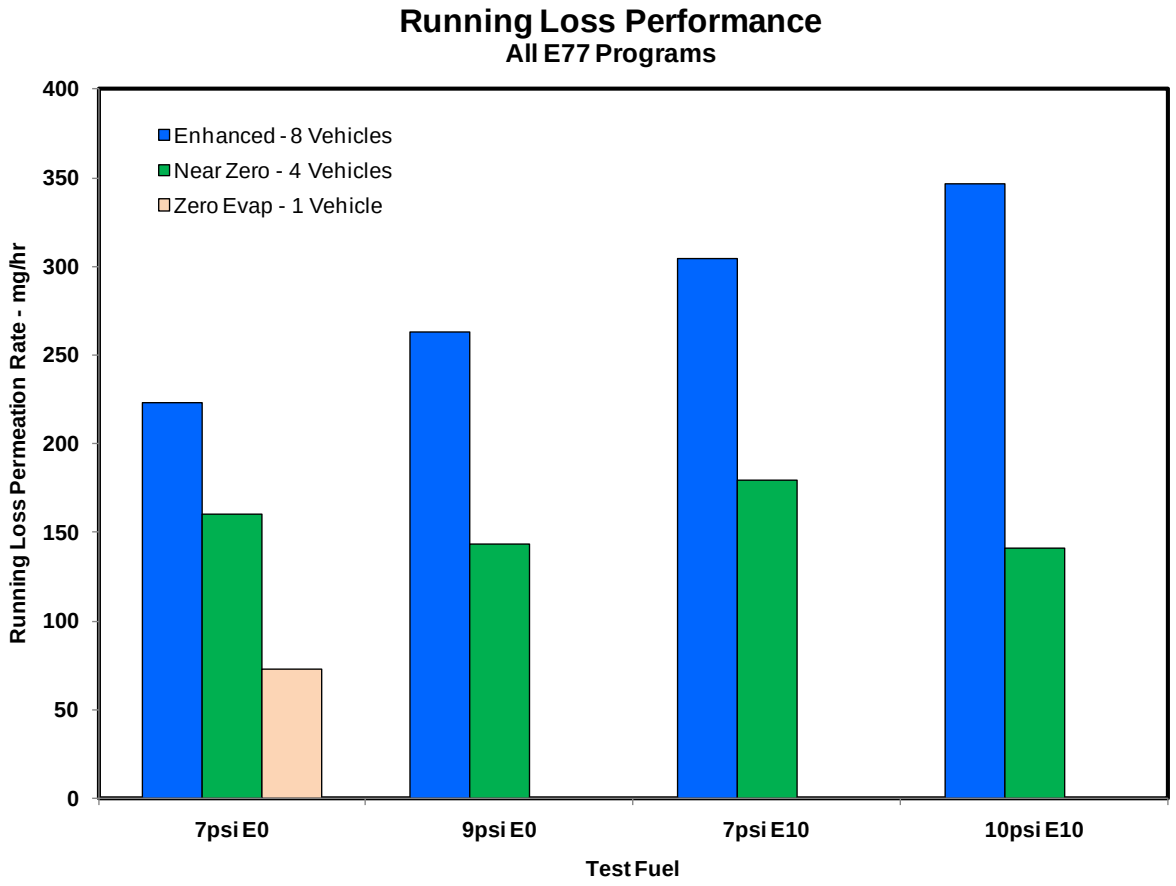


FIGURE 4. RUNNING LOSS PERFORMANCE

3.1.4 Hot Soak ("True Hot Soak") Permeation

The Hot Soak emissions as defined in this report are the net increase in permeation rates following vehicle operation. The mass increase was measured in the SHED for one hour immediately following vehicle operation, and the previously measured static (or normal) permeation at the same temperature was subtracted. Although this is not the traditional CFR definition, the justification for the new definition is shown in Appendix B (the "True" Hot Soak, page B-7) of this report.

The "True Hot Soak" performance for the average of the vehicles is summarized in Figure 5. There was a large increase (~2.5:1) in the hot soak value with the E10 fuel compared to the E0 for the "enhanced" vehicles, but no clear trend is present for the "near zero" vehicles due in part to the small sample size and relatively low levels attained. There may be an indication that hot soak permeation may decrease on the Near Zero vehicles with increasing vapor pressure.

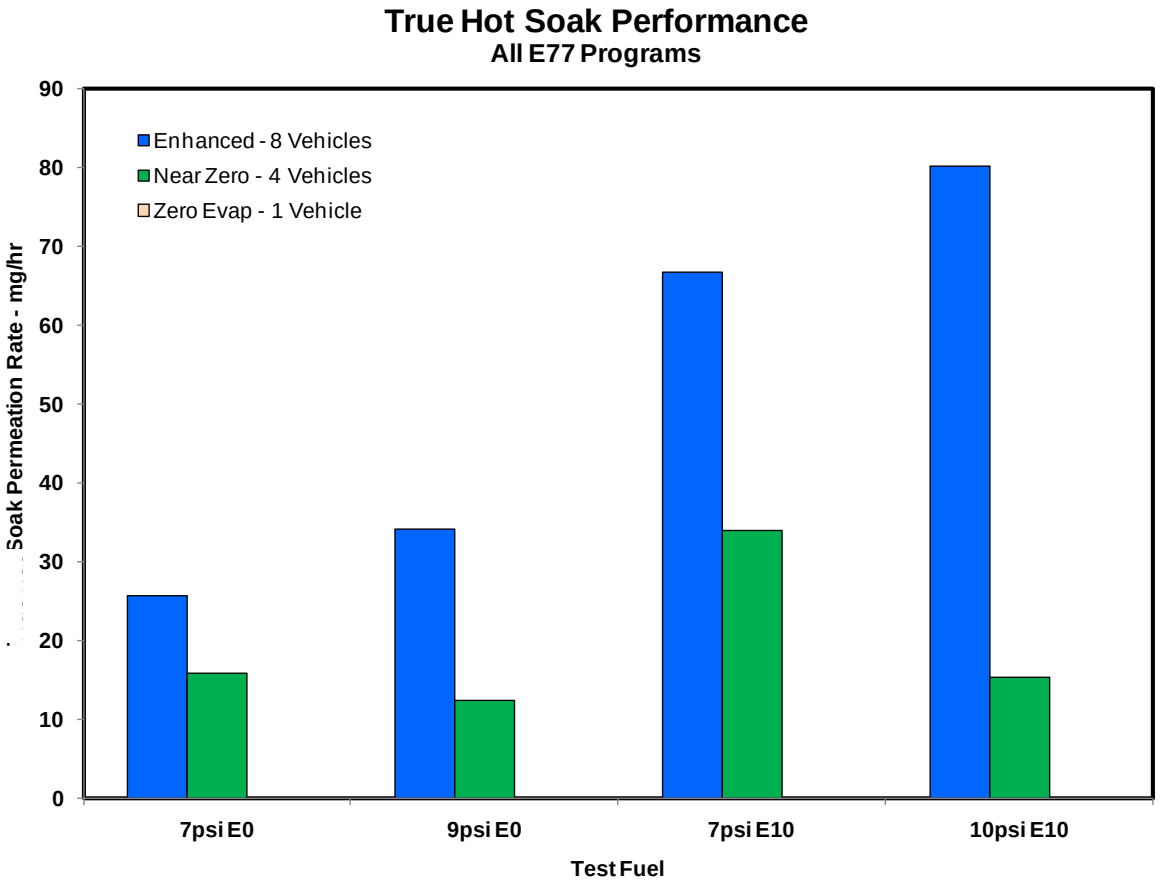


FIGURE 5. TRUE HOT SOAK PERFORMANCE

3.1.5 Diurnal Permeation Performance

Figure 6 presents the diurnal permeation results for the first day of the three-day diurnal test (65° to 105°F). A similar performance trend can be made for days 2 and 3, and for the total emission for all three days

Figure 6 shows that the average day 1 diurnal permeation for the "enhanced" vehicles increased as ethanol content increased. The "near zero" vehicles showed a slight increasing higher trend with increasing volatility. The one "zero evap" vehicle run shows considerably lower diurnal performance.

Figures 7, 8, and 9 display the diurnal performance obtained for days two, three, and the total of the 3-day diurnal tests run (E77-2 and E77-2b). The trends observed for day 1 hold true for the entire test. The averages for the 10 psi E10 fuel are highly dominated by one vehicle.

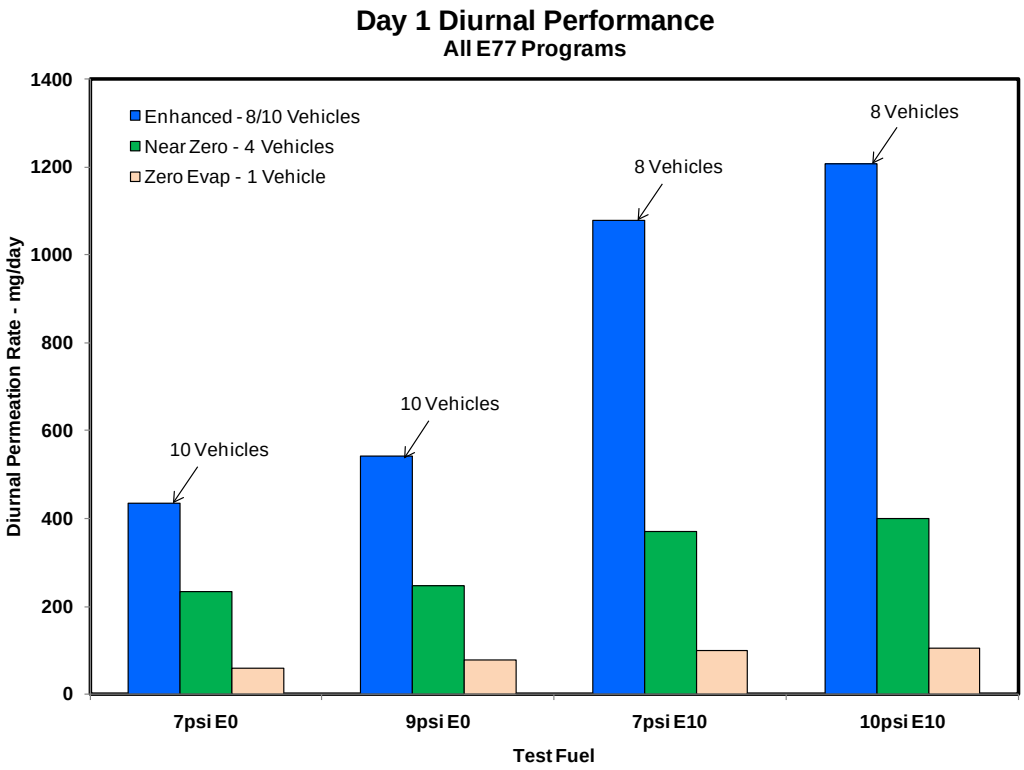


FIGURE 6. DAY ONE DIURNAL PERFORMANCE

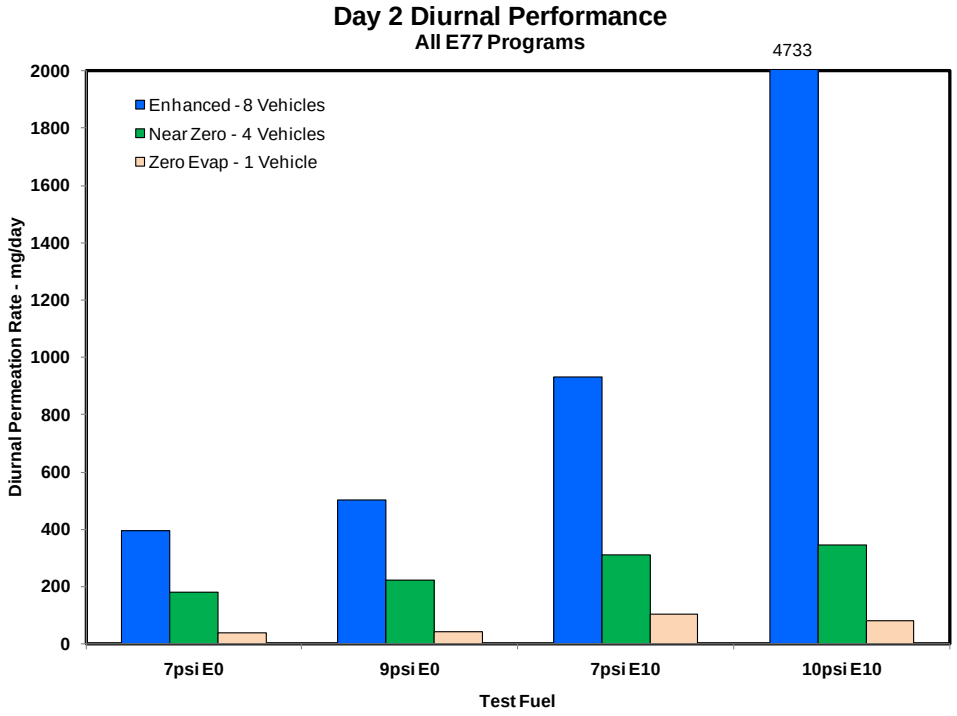


FIGURE 7. DAY TWO DIURNAL PERFORMANCE

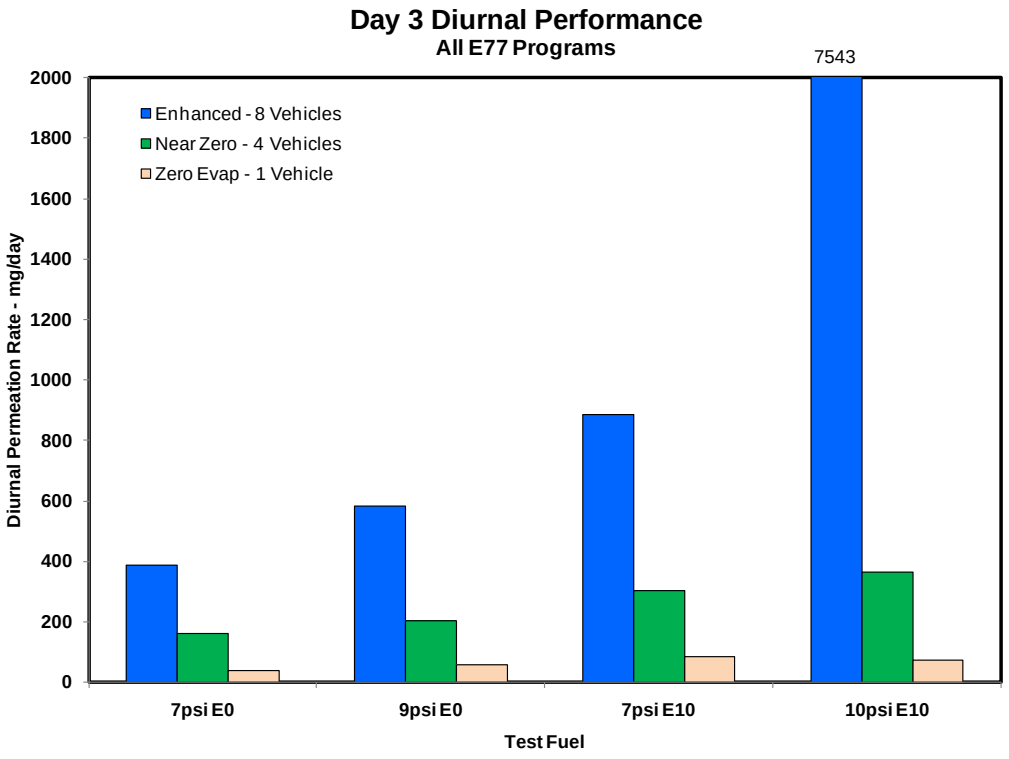


FIGURE 8. DAY THREE DIURNAL PERFORMANCE

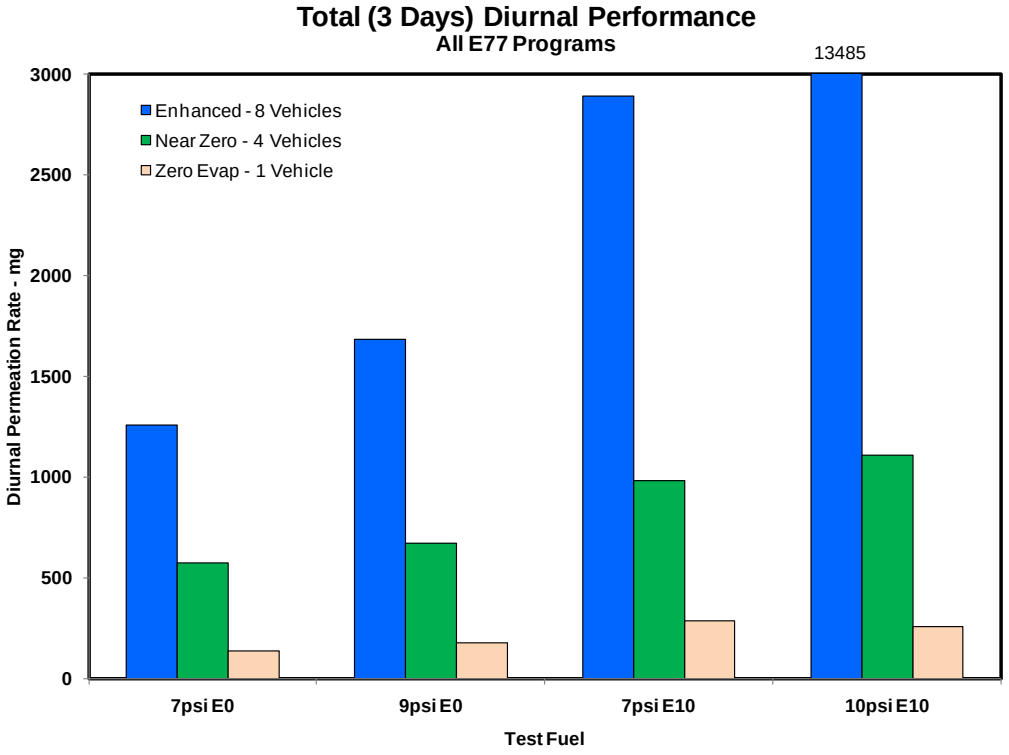


FIGURE 9. TOTAL (3 DAY) DIURNAL PERFORMANCE

3.1.6 Temperature Impact on Steady-State Permeation

For many years, and from many test programs, it has been suggested and confirmed that a 10ºC increase (18°F) in ambient temperature approximately doubles the steady-state (static) permeation rate. The results of this latest program reconfirm that temperature impact. Figure 10 cross-plots the 86ºF static permeation against the 105º F static permeation for six vehicles run on four different fuels, with the 2:1 line shown for reference. Vehicles 206b, 208b, and 209b are certified to Tier 1 standards. Vehicles 210b and 213b are Tier 2, while vehicle 222b is a Zero Evap model.

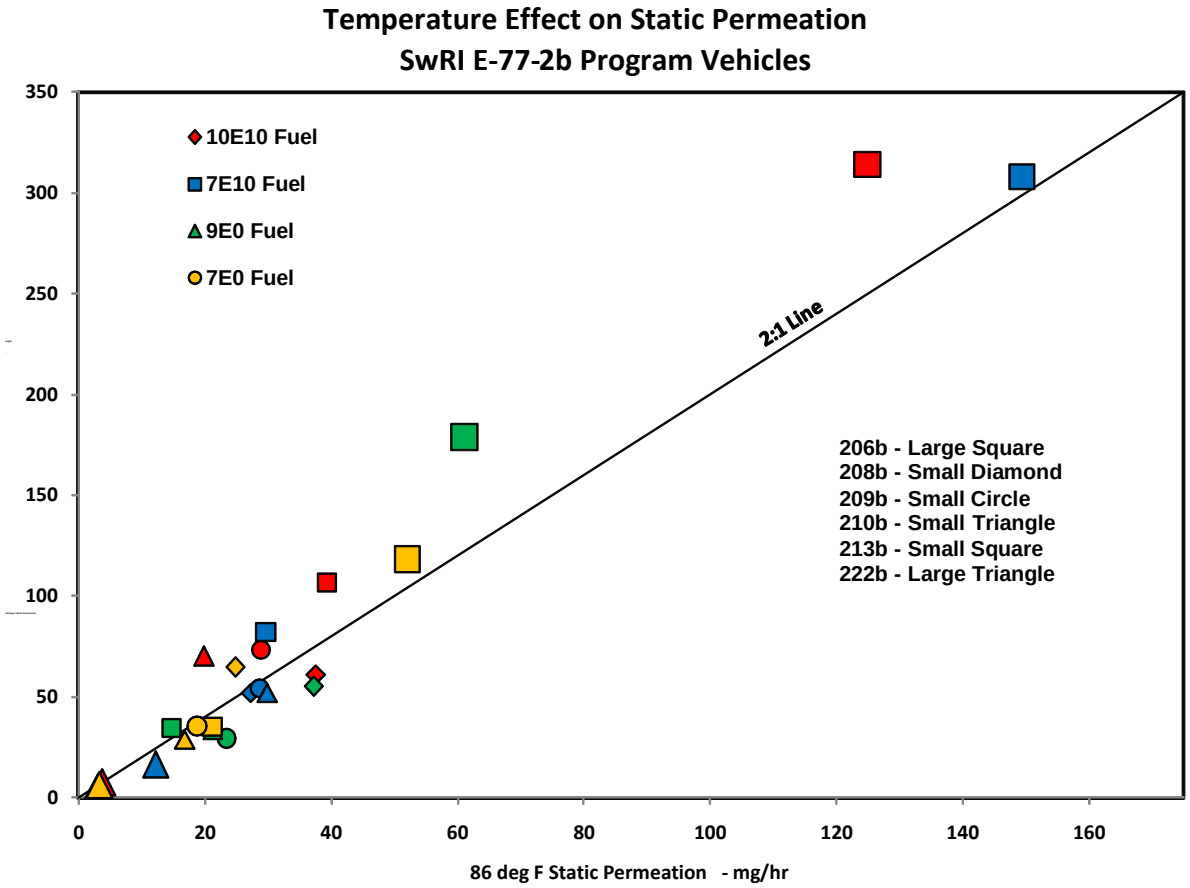


FIGURE 10. TEMPERATURE EFFECT ON STATIC PERMEATION

3.1.7 Special Cases: Fuel System Leak Under Pressure

Vehicles 220b (2000 Chevrolet Malibu) and 221b (2000 Mitsubishi Galant) both exhibited significant leaks when the fuel system was pressurized during the static test. This procedure (Appendix B – Test Procedures) is utilized to check for fuel system leaks. The effect of this leak can be seen in Figures 11 and 12.

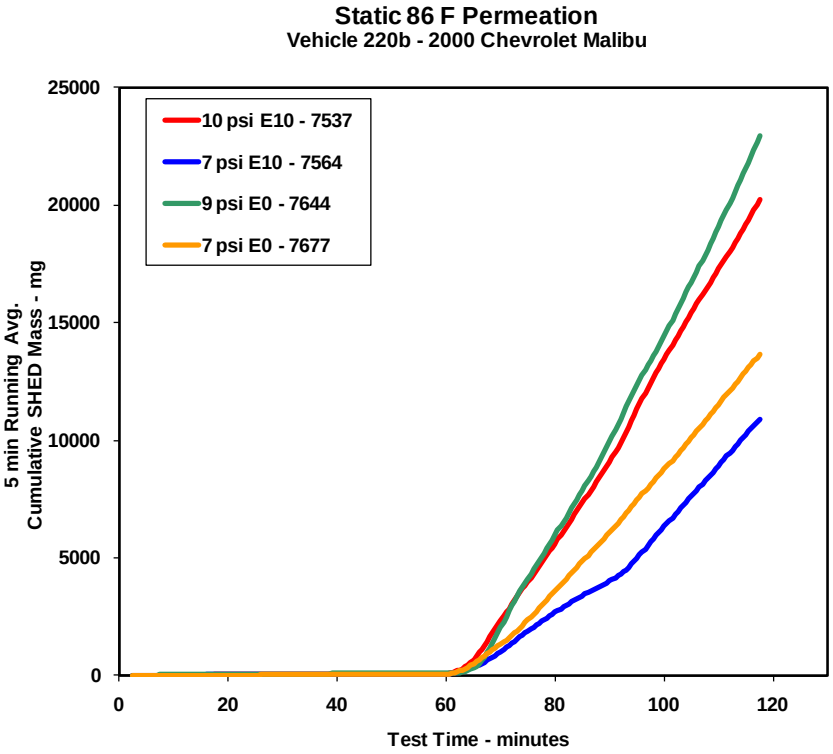


FIGURE 11. VEHICLE 220b STATIC PERFORMANCE

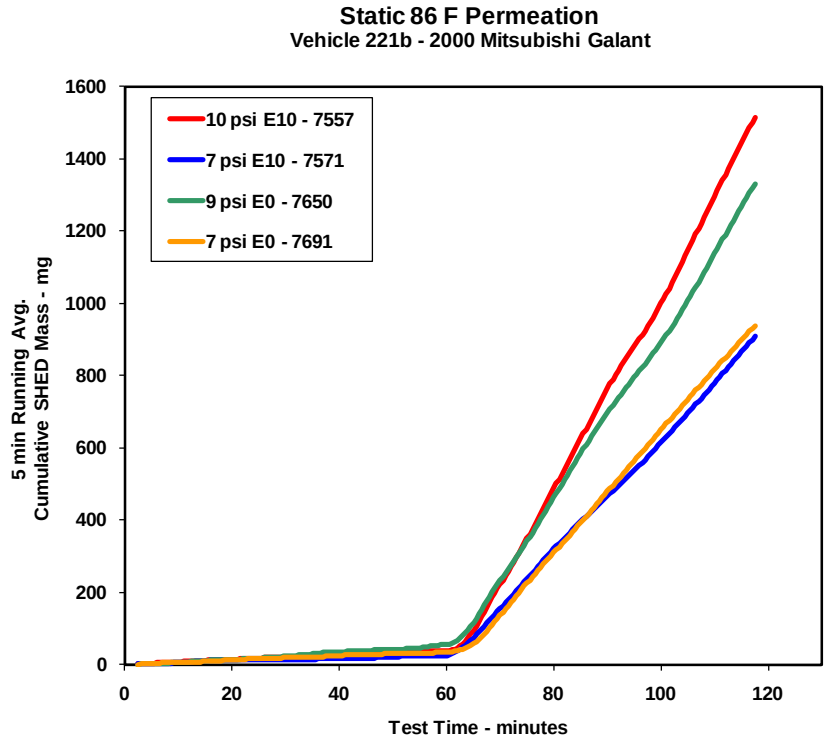


FIGURE 12. VEHICLE 221b STATIC PERFORMANCE

While this leak shows up very dramatically on the static leak check test, there is no reason to think the effect is not present in all testing (static, dynamic and diurnal). For this reason, these two vehicles were removed from all analyses in Section 3.1. The reactivity results are presented for reference in section 3.3, but should be used with care, as there are permeation and leaks present in the analysis. Tables 7 and 8 display the actual test results.

TABLE 7. VEHICLE 220b DATA SUMMARY

2000 Chevrolet Malibu								
						Corrected	SHED Results	Canister
	Fuel					Permeation	mg/day	Loss
Veh	psi/EtOH	Test	Type	Date	Test#	mg/hr	(Corrected)	g
220b	10.0/E10	Static (86)	Perm	05/05/09	7537	68.1		0.00
			Press. Incr.			20127.5		
			Prs+Fuel Incr.			23281.0		
		Static (105)	Perm	05/06/09	7541	214.3		0.00
			Press. Incr.			33978.6		
			Prs+Fuel Incr.			40776.4		
		Dynamic	RL	05/07/09	25774	134.0		0.00
			TEFVO			5.1		0.00
		72 DHB	65-105	05/12/09	7546			
		Day 1					1306.1	0.30
		Day 2					1889.7	10.40
		Day 3					2055.8	24.30
	7.0/E10	Static (86)	Perm	06/03/09	7564	50.4		0.00
			Press. Incr.			9122.4		
			Prs+Fuel Incr.			15723.6		
		Static (105)	Perm	06/04/09	7565	182.0		0.00
			Press. Incr.			23090.2		
			Prs+Fuel Incr.			28945.5		
		Dynamic	RL	06/05/09	25781	697.9		0.00
			TEFVO			76.8		0.00
		72 DHB	65-105	06/09/09	7569			
		Day 1					1177.6	0.00
		Day 2					1612.1	0.00
		Day 3					1483.1	0.00
	9.0/E0	Static (86)	Perm	08/18/09	7644	102.3		0.00
			Press. Incr.			23180.8		
			Prs+Fuel Incr.			28272.5		
		Static (105)	Perm	08/19/09	7647	1858.1		0.00
			Press. Incr.			35297.9		
			Prs+Fuel Incr.			51362.4		
		Dynamic	RL	08/20/09	25789	2417.0		0.00
			"True" HS			352.5		0.00
		72 DHB	65-105	08/25/09	7657			
		Day 1					6733.3	0.00
		Day 2					5884.8	0.00
		Day 3					7049.9	0.00
	7.0/E0	Static (86)	Perm	09/09/09	7677	62.7		0.00
			Press. Incr.			13514.7		
			Prs+Fuel Incr.			16556.8		
		Static (105)	Perm	09/10/09	7680	279.2		0.00
			Press. Incr.			22735.8		
			Prs+Fuel Incr.			30081.7		
		Dynamic	RL	09/11/09	25794	3447.3		0.00
			"True" HS			707.1		0.00
		72 DHB	65-105	09/15/09	7686			
		Day 1					6218.7	0.00
		Day 2					6214.7	0.00
		Day 3					7041.9	0.00

TABLE 8. VEHICLE 221b DATA SUMMARY

2000 Mitsubishi Galant								
						Corrected	SHED Results	Canister
	Fuel					Permeation	mg/day	Loss
Veh	psi/EtOH	Test	Type	Date	Test#	mg/hr	(Corrected)	g
221b	10.0/E10	Static (86)	Perm	05/27/09	7557	38.9		0.00
			Press. Incr.			1568.7		
			Prs+Fuel Incr.			1693.9		
		Static (105)	Perm	05/28/09	7559	80.2		0.00
			Press. Incr.			1932.6		
			Prs+Fuel Incr.			2147.1		
		Dynamic	RL	05/29/09	25778	116.2		0.00
			TEFVO			26.9		0.00
		72 DHB	65-105	06/02/09	7562			
		Day 1					827.9	2.00
		Day 2					724.1	5.40
		Day 3					702.4	21.80
	7.0/E10	Static (86)	Perm	06/10/09	7571	22.7		0.00
			Press. Incr.			930.7		
			Prs+Fuel Incr.			971.0		
		Static (105)	Perm	06/11/09	7572	61.4		0.00
			Press. Incr.			1282.3		
			Prs+Fuel Incr.			1408.5		
		Dynamic	RL	06/12/09	25783	102.0		0.00
			TEFVO			40.5		0.00
		72 DHB	65-105	06/16/09	7579			
		Day 1					894.7	0.00
		Day 2					676.7	0.00
		Day 3					618.0	0.00
	9.0/E0	Static (86)	Perm	08/20/09	7650	55.6		0.00
			Press. Incr.			1348.8		
			Prs+Fuel Incr.			1406.0		
		Static (105)	Perm	08/21/09	7652	94.8		0.00
			Press. Incr.			1646.7		
			Prs+Fuel Incr.			1788.2		
		Dynamic	RL	08/24/09	25790	135.2		0.00
			"True" HS			29.0		0.00
		72 DHB	65-105	09/01/09	7667			
		Day 1					706.4	0.30
		Day 2					543.7	2.60
		Day 3					538.3	9.30
	7.0/E0	Static (86)	Perm	09/17/09	7691	35.9		0.00
			Press. Incr.			988.8		
			Prs+Fuel Incr.			961.8		
		Static (105)	Perm	09/18/09	7692	66.8		0.00
			Press. Incr.			1215.9		
			Prs+Fuel Incr.			1343.8		
		Dynamic	RL	09/22/09	25797	189.8		0.00
			"True" HS			42.5		0.00
		72 DHB	65-105	10/07/09	7716			
		Day 1					603.0	0.00
		Day 2					503.1	0.00
		Day 3					487.0	0.00

The leak in vehicle 220 was later determined to be a deteriorating crack in the fuel vapor vent elbow on the fuel sending unit on the top of the tank The vehicle was dropped from further testing in the later E-77-2c program.

3.1.8 Carbon Canister Breakthrough

Canister breakthrough is measured by the weight change recorded for the trap canister outside the SHED. It quantifies the amount of vapors that overwhelm the evaporative system storage canister. Figure 13 displays the breakthrough resulting from testing of 9 psi E0 fuel.

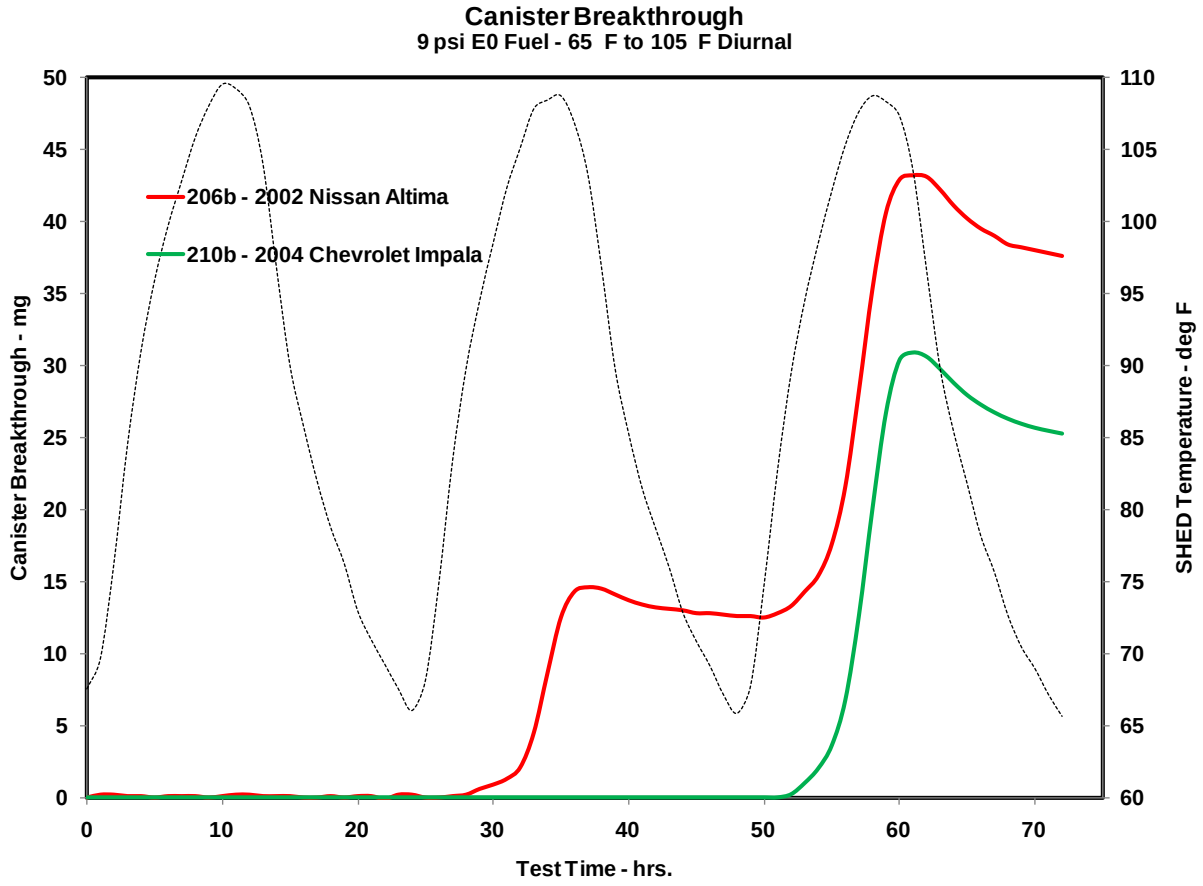


FIGURE 13. CANISTER BREAKTHROUGH

Of the six vehicles for which useable data were obtained for subsequent analysis in this program, no breakthrough occurred when tested on summer grade 7 psi fuel, only two showed some breakthrough on 9 psi transitional grade fuels (shown in Figure 13), but all six exhibited significant breakthrough when tested with 10 psi winter grade fuel.

The lack of canister breakthrough for the 7 psi fuels (summer grade) indicates that the storage capacity of these six systems is appropriately sized.

3.2 Speciation

The project plan included the "speciation" of the evaporative emission results for each of the vehicles and test fuels. A sample of the ambient hydrocarbon (HC) concentration in the VT-SHED was collected in a Tedlar™ bag during each test, and later analyzed for HC species using the laboratory's Varian™ chromatograph, and the "Auto-Oil Test Procedure." The results of this "speciation" allowed the calculation of the average reactivity of the permeate for each of the vehicles and fuels. Appendix B contains a full description of ATL's Speciation Method.

An example of the speciation results is shown in Table 9 below. This table shows just the first 25 of 172 hydrocarbons that are identified using the "Auto-Oil" test method, as reported by the lab.

TABLE 9. SPECIATION RESULTS – VEHICLE 210b – 72-HOUR DIURNAL TEST

Detailed Hydrocarbon Speciation Results			72DHB			
			Net mass	Net conc.	% total	
	Species Name	CAS #	(mg)	(ppmC)	(mg)	(ppmC)
1	Methane	00074-82-8	0.000	0.000	0%	0%
2	Ethylene	00074-85-1	0.000	0.000	0%	0%
3	Acetylene (Ethyne)	00074-86-2	0.000	0.000	0%	0%
4	Ethane	00074-84-0	0.000	0.000	0%	0%
5	Propene	00115-07-1	0.000	0.000	0%	0%
6	Propane	00074-98-6	2.567	0.080	0%	0%
7	Allene (Propadiene)	00463-49-0	0.000	0.000	0%	0%
8	Propyne	00074-99-7	0.000	0.000	0%	0%
9	2-Methylpropane	00075-28-5	6.877	0.218	0%	1%
10	2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	4.323	0.142	0%	0%
11	1,3-Butadiene	00106-99-0	0.748	0.025	0%	0%
12	n-Butane	00106-97-8	150.105	4.763	11%	12%
13	2,2-Dimethylpropane	00463-82-1	0.000	0.000	0%	0%
14	t-2-Butene	00624-64-6	9.424	0.310	1%	1%
15	1-Butyne	00107-00-6	0.000	0.000	0%	0%
16	c-2-Butene	00590-18-1	6.054	0.199	0%	0%
17	3-Methyl-1-butene	00563-45-1	0.000	0.000	0%	0%
18	2-Methylbutane (Isopentane)	00078-78-4	119.321	3.812	9%	9%
19	1-Pentene & 2-Butyne	00109-67-1+00503-17-3	8.829	0.301	1%	1%
20	2-Methyl-1-butene	00563-46-2	13.520	0.444	1%	1%
21	n-Pentane	00109-66-0	28.890	0.923	2%	2%
22	2-Methyl-1,3-butadiene	00078-79-5	0.535	0.018	0%	0%
23	t-2-Pentene	00646-04-8	27.079	0.890	2%	2%
24	3,3-Dimethyl-1-butene	00558-37-2	0.000	0.000	0%	0%
25	c-2-Pentene	00627-20-3	14.071	0.462	1%	1%

Table 9 shows the "Detailed Hydrocarbon Speciation Results," listed in the order that they appear, or "elute." Second column is the species name, and the third is the CAS number[4]. The "net" values shown are the values after the initial, or time-zero SHED mass values have been subtracted.

[4] The CAS number is the Chemical Abstract Service registry number assigned to each specific molecule. CAS registry numbers are copyrighted by the American Chemical Society. Redistribution rights for CAS registry numbers are reserved by the American Chemical Society. "CAS registry" is a registered trademark of the American Chemical Society. The CAS REGISTRY mostly covers substances identified from the scientific literature from 1957 to the present with some classes (fluorine- and silicon-containing compounds) going back to the early 1900s. Each substance in REGISTRY is identified by a unique numeric identifier called a CAS Registry Number.

A more useful presentation is shown in Table 10, where the results have been sorted by net mass, bringing the largest mass species to the top. In this case, the largest mass present was ethanol, at 221.0 mg, or 16% of the identified mass. The complete data set for the speciations can be found in Appendix E.

TABLE 10. MASS SORTED SPECIATION RESULTS – VEHICLE 210b – 72-HOUR DIURNAL TEST

Detailed Hydrocarbon Speciation Results			72DHB			
			Net mass	Net conc.	% total	
	Species Name	CAS #	(mg)	(ppmC)	(mg)	(ppmC)
	Ethanol	00064-17-5	220.954	4.417	16%	11%
12	n-Butane	00106-97-8	150.105	4.763	11%	12%
18	2-Methylbutane (Isopentane)	00078-78-4	119.321	3.812	9%	9%
81	Toluene	00108-88-3	111.734	3.912	8%	10%
40	n-Hexane	00110-54-3	85.020	2.730	6%	7%
36	2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	50.765	1.630	4%	4%
38	3-Methylpentane	00096-14-0	37.109	1.191	3%	3%
63	2,2,4-TriMePentane (IsoOctane)	00540-84-1	34.009	1.098	2%	3%
26	2-Methyl-2-butene	00513-35-9	32.366	1.064	2%	3%
21	n-Pentane	00109-66-0	28.890	0.923	2%	2%
53	Benzene	00071-43-2	27.841	0.985	2%	2%
23	t-2-Pentene	00646-04-8	27.079	0.890	2%	2%
49	Methylcyclopentane	00096-37-7	24.806	0.815	2%	2%
56	Cyclohexane	00110-82-7	22.521	0.740	2%	2%
34	2,3-Dimethylbutane	00079-29-8	20.899	0.671	2%	2%
25	c-2-Pentene	00627-20-3	14.071	0.462	1%	1%
57	2-Methylhexane	00591-76-4	14.030	0.452	1%	1%
74	Methylcyclohexane	00108-87-2	13.577	0.446	1%	1%
20	2-Methyl-1-butene	00563-46-2	13.520	0.444	1%	1%
66	n-Heptane	00142-82-5	12.843	0.413	1%	1%
79	2,3,4-Trimethylpentane	00565-75-3	12.580	0.406	1%	1%
59	Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	12.194	0.393	1%	1%
50	2,4-Dimethylpentane	00108-08-7	10.867	0.350	1%	1%
14	t-2-Butene	00624-64-6	9.424	0.310	1%	1%
42	t-2-Hexene	04050-45-7	8.954	0.294	1%	1%

3.3 Reactivity

Previous E-77 test programs had not included speciation in the test evaluation, and this program E-77-2b, was the first that allowed average reactivity to be calculated. EPA along with CRC has collected the data in this study to be used in the Motor Vehicle Emissions Simulator (MOVES) model. EPA handles its estimates of ozone formation in both their rulemakings and in State Implementation Plans by air quality modeling. The modeling requires inventories such as from MOVES and NONROAD models for HC, CO, NO_X and PM. For HC, the exhaust and evaporative HC (VOC) emissions are speciated using speciation profiles that break HC down into individual chemical constituents. These profiles are typically obtained from an EPA tool called SPECIATE (http://www.epa.gov/ttn/chief/software/speciate/index.html). SPECIATE generally has over 100 different compounds (paraffins, olefins, alkynes, alcohols, and aldehydes) for both exhaust and evaporative emissions. The component hydrocarbons are then used in air

quality models to predict ozone formation. A recent example of this modeling is discussed in the Regulatory Impact Analysis for the Renewable Fuels Standards which uses the CMAQ (Community Multi-scale Air Quality) model (http://www.epa.gov/AMD/CMAQ/). An example of an EPA rulemaking package is the Regulatory Impact Analysis for the recent RFS2 rulemaking:

"Draft Regulatory Impact Analysis: Changes to Renewable Fuel Standard Program," EPA-420-D-09-001, May 2009, http://www.epa.gov/otaq/renewablefuels/420d09001.pdf.

A more simplified approach to assessing ozone formation potential is use of reactivity factors. Hydrocarbons are one of the precursors to the formation of atmospheric ozone. Each of the individual species of hydrocarbons in gasoline may have differing reaction rates in the ozone-forming process. In 1994, Dr. William Carter of the University of California published a set of "ozone forming potential" factors known as the Maximum Incremental Reactivity (MIR) scale. The applicability of these factors is a subject of debate, but ARB has used the Carter Factors in their atmospheric predictions. These factors have been updated over the years, and the CY 2008 values used in this analysis were taken from the ARB website at:

http://www.arb.ca.gov/fuels/gasoline/premodel/pmdevelop.htm

The MIR is the ratio of the mass of ozone that would be formed under ideal conditions by a similar mass of the Volatile Organic Compound (VOC). For example, one mg of ethanol is predicted to form 1.45 mg of ozone. One can estimate the average reactivity of an ambient mixture by summing the predicted ozone result for all the identified species, and then dividing by the sum of the measured VOC mass.

A sample chart, using the data from the three-day diurnal on Vehicle 210b is shown in Table 11, illustrating how the average reactivity of the various fuels was calculated. Again, the various species are sorted by decreasing order of their mass in the measured SHED sample. The left column is the species name, with its CAS number at the next right. The Carter factor (MIR) is next, and then the mass of the species, as VOC in mg.

The sum of the predicted ozone for this test (Table 11) was 3812.8 mg, from 1298.2 mg of VOC. Dividing the total ozone mass by the total VOC mass gives the average reactivity of this test of 2.937. The summary of reactivities for all eight vehicles is shown in Tables 12 through 19.

TABLE 11. REACTIVITY RESULTS

Vehicle 210b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7462					
Non Zero Mass Species Sorted By VOC					
Species	**CAS No.**	**MIR**	**Composite VOC mg**	**Ozone mg**	
Ethanol	00064-17-5	1.45	220.95	320.157	
n-Butane	00106-97-8	1.08	150.10	161.650	
2-Methylbutane (Isopentane)	00078-78-4	1.35	119.32	161.666	
Toluene	00108-88-3	3.93	111.73	438.558	
n-Hexane	00110-54-3	1.13	85.02	96.470	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	50.76	70.959	
3-Methylpentane	00096-14-0	1.69	37.11	62.747	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	34.01	40.781	
2-Methyl-2-butene	00513-35-9	14.20	32.37	459.437	
n-Pentane	00109-66-0	1.21	28.89	35.099	
Benzene	00071-43-2	0.69	27.84	19.331	
t-2-Pentene	00646-04-8	10.47	27.08	283.609	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.36	4.244	
Unknown #22	.	2.94	0.34	0.989	
1-Heptene	00592-76-7	4.29	0.33	1.428	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.94	0.32	0.933	
1-Nonene	00124-11-8	2.49	0.32	0.786	
Isopropylbenzene (Cumene)	00098-82-8	2.94	0.28	0.835	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.28	1.744	
Indan	00496-11-7	3.23	0.27	0.886	
1,1-Dimethylcyclohexane	00590-66-9	1.12	0.17	0.186	
		Total	1298.2	3812.8	2.937
No MIR available, use weighted average of 2.9369					

TABLE 12. VEHICLE REACTIVITY SUMMARIES

Vehicle 206b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7456	247.0	100.8	249.1	885.1	3.553	71
Static	E10 - 7 psi	7484	279.7	79.6	222.7	796.1	3.575	60
	E0 - 9 psi	7539	123.3	99.5	122.8	511.2	4.164	55
	E0 - 7 psi	7561	97.3	80.1	78.0	284.8	3.651	56
105° F	E10 - 10 psi	7459	630.7	93.1	587.4	2085.4	3.550	86
Static	E10 - 7 psi	7487	606.2	125.3	759.4	2686.3	3.538	84
	E0 - 9 psi	7545	366.7	72.9	267.3	814.4	3.047	30
	E0 - 7 psi	7563	234.6	85.9	201.5	854.3	4.241	30
Dynamic	E10 - 10 psi	25753	727.2	87.3	634.7	2191.6	3.453	66
	E10 - 7 psi	25760	673.6	90.0	606.0	2158.5	3.562	59
	E0 - 9 psi	25775	456.1	76.8	350.1	1316.4	3.760	54
	E0 - 7 psi	25780	316.9	78.8	249.7	987.9	3.956	52
DHB	E10 - 10 psi	7476	76809.3	82.4	63303.9	148993.1	2.354	123
Total	E10 - 7 psi	7495	6985.0	88.6	6189.7	21304.5	3.442	108
	E0 - 9 psi	7551	4036.4	91.1	3677.3	11381.0	3.095	107
	E0 - 7 psi	7567	2993.3	93.4	2797.0	8687.2	3.106	105

TABLE 13. VEHICLE REACTIVITY SUMMARIES

Vehicle 208b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7413	75.6	127.7	96.6	413.8	4.284	42
Static	E10 - 7 psi	7478	50.5	102.6	51.9	136.0	2.623	40
	E0 - 9 psi	7530	74.2	121.3	90.0	287.6	3.195	52
	E0 - 7 psi	7568	49.6	102.0	50.6	159.2	3.146	55
105° F	E10 - 10 psi	7415	115.2	110.4	127.1	415.6	3.268	59
Static	E10 - 7 psi	7480	105.4	104.1	109.7	391.9	3.572	76
	E0 - 9 psi	7532	112.7	102.4	115.4	370.1	3.207	60
	E0 - 7 psi	7570	123.9	94.4	117.0	403.3	3.448	63
Dynamic	E10 - 10 psi	25744	337.0	95.8	322.8	1369.5	4.242	56
	E10 - 7 psi	25759	308.3	132.8	409.4	1718.9	4.198	72
	E0 - 9 psi	25771	257.5	159.1	409.6	1853.2	4.524	52
	E0 - 7 psi	25782	199.7	51.9	103.6	353.6	3.413	40
DHB	E10 - 10 psi	7463	1852.2	103.6	1919.2	5628.6	2.933	107
Total	E10 - 7 psi	7489	1740.5	89.3	1554.4	5099.2	3.281	107
	E0 - 9 psi	7556	1864.6	93.2	1737.6	4606.5	2.651	98
	E0 - 7 psi	7575	1317.5	88.6	1167.2	3392.4	2.906	86

TABLE 14. VEHICLE REACTIVITY SUMMARIES

Vehicle 209b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7423	52.1	165.6	86.2	276.2	3.205	63
Static	E10 - 7 psi	7466	54.4	130.9	71.2	262.9	3.692	78
	E0 - 9 psi	7501	44.8	83.4	37.3	76.3	2.043	19
	E0 - 7 psi	7524	38.8	120.5	46.8	161.0	3.441	51
105° F	E10 - 10 psi	7424	160.9	117.8	189.4	593.2	3.131	65
Static	E10 - 7 psi	7467	102.4	98.8	101.2	340.7	3.368	57
	E0 - 9 psi	7504	55.8	86.1	48.1	186.9	3.886	52
	E0 - 7 psi	7527	62.4	101.5	63.3	245.8	3.885	50
Dynamic	E10 - 10 psi	25742	401.4	111.9	449.1	1629.8	3.629	74
	E10 - 7 psi	25755	217.1	85.1	184.7	701.1	3.796	58
	E0 - 9 psi	25761	140.9	102.9	145.0	658.3	4.541	45
	E0 - 7 psi	25768	166.6	87.9	146.4	543.1	3.708	31
DHB	E10 - 10 psi	7461	1434.5	93.8	1345.1	3821.9	2.841	110
Total	E10 - 7 psi	7472	1055.7	93.7	989.6	2879.4	2.909	89
	E0 - 9 psi	7508	802.6	59.6	478.6	1316.0	2.749	65
	E0 - 7 psi	7533	821.9	94.5	776.5	2515.6	3.239	81

TABLE 15. VEHICLE REACTIVITY SUMMARIES

Vehicle 210b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7449	51.6	89.7	46.3	143.2	3.096	49
Static	E10 - 7 psi	7468	63.0	96.2	60.6	186.3	3.072	56
	E0 - 9 psi	7523	46.2	121.3	56.1	208.1	3.712	53
	E0 - 7 psi	7547	37.5	90.0	33.7	108.4	3.214	40
105° F	E10 - 10 psi	7451	147.3	102.1	150.3	473.4	3.150	62
Static	E10 - 7 psi	7471	117.5	92.6	108.8	346.6	3.186	69
	E0 - 9 psi	7525	69.8	132.1	92.3	296.6	3.215	62
	E0 - 7 psi	7549	74.0	104.9	77.6	270.6	3.486	48
Dynamic	E10 - 10 psi	25749	198.4	85.9	170.5	569.7	3.342	52
	E10 - 7 psi	25756	189.1	100.1	189.2	710.5	3.754	48
	E0 - 9 psi	25767	178.0	74.9	133.2	328.8	2.468	41
	E0 - 7 psi	25776	234.9	84.5	198.4	848.9	4.278	32
DHB	E10 - 10 psi	7462	1386.1	93.7	1298.2	3812.8	2.937	95
Total	E10 - 7 psi	7482	1192.5	87.0	1037.4	3101.2	2.989	86
	E0 - 9 psi	7531	1143.4	88.3	1010.2	2351.6	2.328	32
	E0 - 7 psi	7550	758.3	87.7	665.0	1927.4	2.898	86

TABLE 16. VEHICLE REACTIVITY SUMMARIES
Vehicle 213b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7442	74.9	84.5	63.3	229.3	3.620	59
Static	E10 - 7 psi	7464	60.4	77.3	46.7	118.1	2.531	12
	E0 - 9 psi	7506	34.8	88.3	30.7	102.3	3.329	41
	E0 - 7 psi	7526	40.9	86.2	35.3	104.0	2.947	38
105° F	E10 - 10 psi	7446	228.3	105.1	239.8	761.0	3.174	78
Static	E10 - 7 psi	7465	159.2	87.2	138.9	440.2	3.169	64
	E0 - 9 psi	7507	71.1	82.7	58.8	173.0	2.943	32
	E0 - 7 psi	7528	66.8	106.3	71.0	251.7	3.546	50
Dynamic	E10 - 10 psi	25750	144.8	124.2	179.8	839.7	4.669	48
	E10 - 7 psi	25754	284.5	88.3	251.3	879.7	3.500	60
	E0 - 9 psi	25764	191.7	52.9	101.4	314.8	3.105	38
	E0 - 7 psi	25769	141.4	69.4	98.1	381.1	3.885	59
DHB	E10 - 10 psi	7429	1966.7	101.3	1992.2	5290.8	2.656	92
Total	E10 - 7 psi	7473	1769.4	67.1	1187.5	4082.1	3.438	80
	E0 - 9 psi	7516	967.5	88.7	858.6	2298.5	2.677	73
	E0 - 7 psi	7538	917.6	94.2	864.0	2571.4	2.976	80

TABLE 17. VEHICLE REACTIVITY SUMMARIES
Caution: These measurements include known leaks as well as permeation
Vehicle 220b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7537	21249.9	91.1	19364.6	45551.4	2.352	87
Static	E10 - 7 psi	7564	11657.5	81.0	9442.0	28464.0	3.015	96
	E0 - 9 psi	7644	24378.7	96.6	23556.0	50039.7	2.124	93
	E0 - 7 psi	7677	14347.6	99.7	14299.8	35390.0	2.475	114
105° F	E10 - 10 psi	7541	36851.0	78.1	28779.5	70524.0	2.450	105
Static	E10 - 7 psi	7565	24424.1	91.8	22427.0	66555.4	2.968	127
	E0 - 9 psi	7647	44422.3	90.3	40098.4	88163.2	2.199	108
	E0 - 7 psi	7680	25952.5	105.4	27348.3	68042.1	2.488	120
Dynamic	E10 - 10 psi	25774	180.3	74.0	133.5	501.4	3.756	45
	E10 - 7 psi	25781	685.5	64.2	440.2	1445.3	3.283	69
	E0 - 9 psi	25789	2388.4	99.7	2380.7	6653.4	2.795	55
	E0 - 7 psi	25794	3527.7	104.6	3689.9	12792.2	3.467	114
DHB	E10 - 10 psi	7546	5251.6	91.5	4805.1	12517.4	2.605	107
Total	E10 - 7 psi	7569	4272.9	91.7	3916.7	11477.1	2.930	125
	E0 - 9 psi	7657	19668.0	103.4	20327.8	49439.0	2.432	128
	E0 - 7 psi	7686	19475.3	103.9	20242.7	51559.2	2.547	134

TABLE 18. VEHICLE REACTIVITY SUMMARIES
Caution: These measurements include known leaks as well as permeation
Vehicle 221b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7557	1592.1	85.9	1367.1	3249.9	2.377	57
Static	E10 - 7 psi	7571	951.42	75.9	722.3	2179.9	3.018	65
	E0 - 9 psi	7650	1390.71	89.8	1248.3	2750.8	2.204	66
	E0 - 7 psi	7691	979.48	114.5	1121.8	2764.8	2.465	72
105° F	E10 - 10 psi	7559	2131.5	92.0	1960.1	4768.7	2.433	79
Static	E10 - 7 psi	7572	1354.2	93.7	1268.7	3796.8	2.993	76
	E0 - 9 psi	7652	1823.3	100.0	1824.1	3993.6	2.189	66
	E0 - 7 psi	7692	1351.9	115.3	1558.2	4073.8	2.614	103
Dynamic	E10 - 10 psi	25778	158.8	97.8	155.3	519.8	3.347	54
	E10 - 7 psi	25783	144.6	118.7	171.6	578.9	3.373	59
	E0 - 9 psi	25790	192.8	161.7	311.8	851.8	2.732	55
	E0 - 7 psi	25797	230.2	88.6	204.1	877.0	4.298	49
DHB	E10 - 10 psi	7562	2254.5	86.6	1952.6	5269.2	2.699	90
Total	E10 - 7 psi	7579	2189.4	85.0	1860.2	5643.5	3.034	104
	E0 - 9 psi	7667	1788.4	90.9	1625.8	4353.4	2.678	83
	E0 - 7 psi	7716	1593.2	103.2	1644.2	4729.0	2.876	92

TABLE 19. VEHICLE REACTIVITY SUMMARIES
Vehicle 222b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7552	12.2	212.7	26.0	76.7	2.953	21
Static	E10 - 7 psi	7576	28.2	95.7	27.0	73.7	2.729	29
	E0 - 9 psi	7655	6.4	79.8	5.1	28.5	5.617	10
	E0 - 7 psi	7712	7.0	215.7	15.1	59.6	3.957	24
105° F	E10 - 10 psi	7554	20.6	163.4	33.7	119.6	3.545	32
Static	E10 - 7 psi	7578	28.9	111.3	32.1	134.5	4.189	41
	E0 - 9 psi	7659	11.7	180.8	21.2	100.3	4.734	46
	E0 - 7 psi	7715	14.0	228.9	32.1	165.4	5.146	43
Dynamic	E10 - 10 psi	25779	73.3	30.1	22.1	54.9	2.488	22
	E10 - 7 psi	25785	51.6	66.8	34.5	81.1	2.351	21
	E0 - 9 psi	25791	33.5	145.1	48.6	231.3	4.759	19
	E0 - 7 psi	25808	97.2	72.7	70.6	220.5	3.122	39
DHB	E10 - 10 psi	7558	257.2	70.4	181.0	525.8	2.905	68
Total	E10 - 7 psi	7580	287.6	93.6	269.1	853.3	3.171	66
	E0 - 9 psi	7696	177.2	95.4	169.1	728.2	4.307	64
	E0 - 7 psi	7742	136.4	67.5	92.1	286.4	3.111	47

3.4 Summary of Findings and Results

The E-77-2b test program was a continuation of the earlier E-77 test program which added eight vehicles to be tested on four fuels to increase the size of the knowledge base. The permeation trends previously shown were again present. The small sample size and limited number of tests preclude making statements about statistical validity, but in general:

- Increasing ethanol content (0% to 10%) increased permeation in the "enhanced" vehicles tested.

- "Near zero" and "zero evap" vehicles were less sensitive (or insensitive) to ethanol level. This may be due to the materials used to achieve the lower emission levels, or perhaps the limited sample size.

- Increased fuel volatility increased permeation levels for "enhanced" vehicles.

- The lower emitting "near zero" and zero evap" vehicles did not exhibit a clear trend with increasing volatility level. Again, this may be due to the materials used for the vehicles tested, or the small sample size.

- "Near zero" and "zero evap" vehicles had lower emissions than the "enhanced" vehicles.

- The two vehicles identified with "leaks" were not included in the analysis for the permeation trends, but were interesting in that they may suggest deterioration with time for the vehicles at eight or more years of age.

3.5 Looking Ahead

Additional test work is suggested to increase the knowledge base (particularly concerning the newer designs). Since losing two vehicles to leak conditions, the knowledge base contains a total of eight "enhanced" vehicles, four "near zero" vehicles and only one "zero evap" vehicle – hardly enough to make any statistical evaluation of trends. Consideration should be given to additional testing.

APPENDIX A

E-77 TEST CONCEPT AND THEORY

The Test Concept: Measuring Leaks, Permeation and Diurnal Vapor Losses

CRC's E-77 emission test programs have developed (and strive to continually improve) new methodologies for understanding and quantifying vehicle evaporative emission rates. The concept partitions and assigns the vehicle's contribution to the evaporative emission inventory into three mechanisms:

1. Permeation
2. Tank vapor venting
3. Leaks (with two subsets - Liquid and Vapor)

Permeation is the migration of HC through the various elastomers in a vehicle fuel system[5]. Previous testing has shown that permeation rate is strongly affected by the material's temperature, doubling for each 10ºC (18ºF) increase in the range of normal summer temperatures (See, among others, CRC Project E-65-3 report.) It is also strongly affected by gasoline composition, especially with ethanol-containing fuels.

Tank vapor venting emissions are controlled by fitting a carbon canister to the atmospheric tank vent. Figure A1 is a schematic of a typical early control system. During a daily heating period, the temperature of the vehicle's fuel tank increases, forcing HC vapors from the tank. Excess emissions, exceeding the carbon canister's capacity, are vented to the atmosphere.

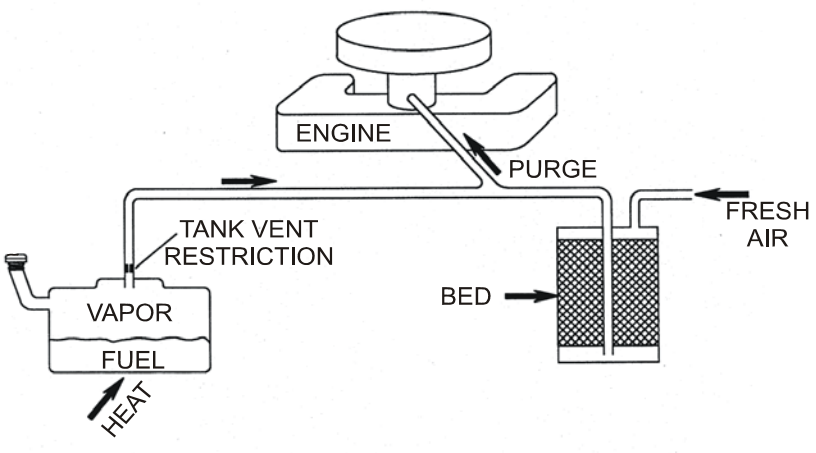


Figure A-1. Control System Schematic

[5] "Fuel Permeation from Automotive Systems: Final Report CRC Project E-65," Haskew, Liberty and McClement, September 2004, available on the CRC and California Air Resources Board websites.

Leaks can be liquid or vapor. Mass emissions are measured in a VT SHED or Variable Temperature Sealed Housing for Evaporative Determination. The SHED test method combines all three emission mechanisms (leaks, diurnal venting, and permeation) into a single test result.

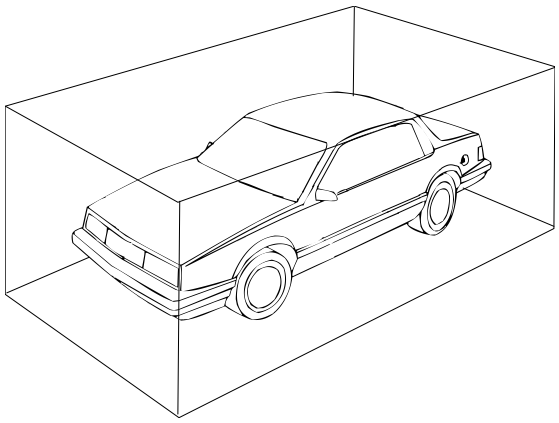


Figure A-2. Sealed Housing for Evaporative Determination

The SHED technique involves placing the vehicle in a sealed enclosure (Figure A2), and calculating the mass in the enclosure from the volume, density and concentration in the enclosure at the start and end of a time period. The difference between the mass at the start and end of test is the emission rate, e.g., grams per unit time.

Permeation and tank venting losses are strongly driven by fuel composition, ambient temperature, and ambient temperature change. Liquid leaks are not strongly affected by normal summer temperatures, and they are thought to have two components:

1. Static leaks occurring while the engine is turned off and the vehicle is stationary.
2. Increase in leak rate caused by the system pressure increase during engine operation.

A Test Method for Separating Permeation from Tank Venting and Leaks – In a previous CRC Project (E-65), the canister loss was separated from the permeation measurement by venting the losses from the carbon canister outside the SHED. For Project E-77, the canister vent losses were collected and measured in a separate "trap canister" on a scale outside the SHED, as shown in Figure A3. This vent line was capped off, i.e., sealed during the Static Test, but connected as shown in the figure for the Dynamic and the Diurnal Tests. The ambient temperature in the SHED was constant during the static test, and there was no vapor created at constant temperature. This vent was closed to pressurize the system for the leak evaluations. The resulting SHED increase in HC mass was permeation[6].

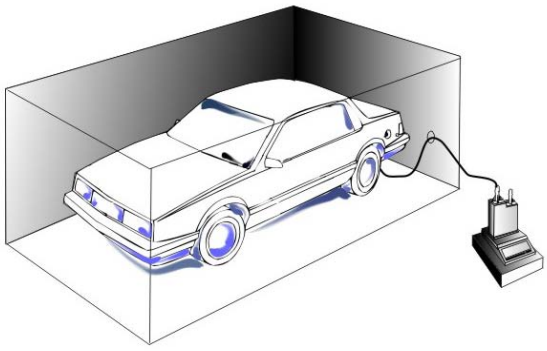


Figure A-3. Trap Canister

The last mechanism that needed to be evaluated was leaks. Leaks can be both vapor and liquid. A liquid leak can have significant mass, currently undetected by the vehicle's on-board diagnostic system. Considerable thought and effort have gone into the creation of a simple and effective liquid leak detection methodology, without success. The techniques used in this project

[6] This is a simplification. There are other HC sources present that are not fuel permeation. These include tire, paint, adhesives and vinyl emissions, and the possibility of fuel leaks from the fuel injectors. The authors believe these to be a minor component of the emissions measured in this study.

required the use of a SHED for measurements. The techniques were not simple, but they proved effective.

Based on experience, a vehicle's permeation rate is expected to lie between 4 to 90 mg/hour range. The presence of a static liquid leak is expected to overwhelm this value; such a leak would (or could) be apparent by inspection. Leaks from the vehicles were quantified in a three-step test process. The first step was to measure the static permeation rate of the vehicle at 86ºF. The vehicle was allowed to stabilize at 86ºF in the SHED and the permeation rate was calculated from the mass increase in the SHED. The second part of the test, looking for pressure driven leaks in the vapor system, was performed by pressurizing the vehicle's tank to 5" H_2O through a special fuel cap and tubing from outside the SHED (Figure A4). The special fuel cap, the hose and the pressurization apparatus was installed before the start of the sequence. The HC concentration in the SHED was monitored, and the increase in the mass of HC in the SHED was compared to the static permeation rate. If there was no (or insignificant) rate of increase, it was deduced that no vapor leak is present.

Figure A-4. Static Test – Tank

The third and final part of the test was to energize the vehicle's fuel pump and pressurize the system up to and including the injectors (Figure A-5). If there were a pressure leak in the liquid system, an increase in the SHED mass over time would be seen, i.e., the leak would be additive to the permeation rate.

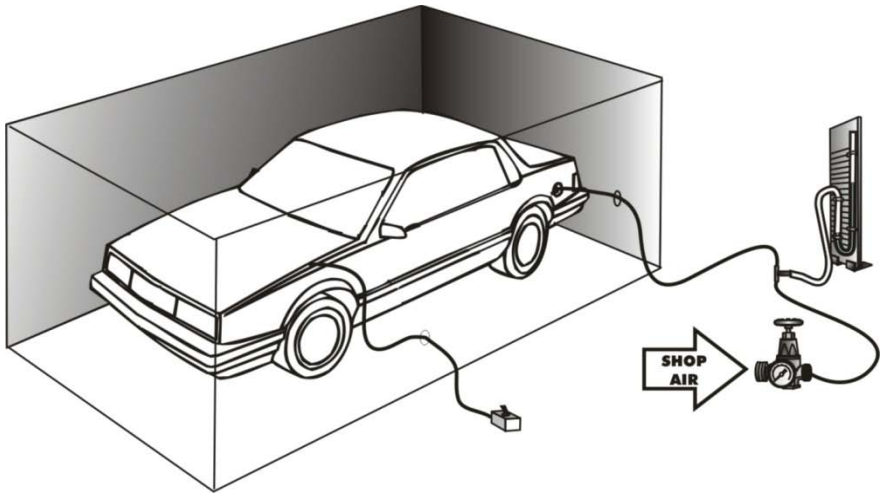


Figure A-5. Static Test – Fuel Pump Energized

Other Tests (Dynamic, Hot Soak, and Diurnal) - A similar configuration is used to isolate the tank venting losses from the permeation measurements determined by other test procedures. The vehicle's canister vent is connected with a low permeation hose (Teflon™) to a bulk-head fitting in the SHED wall and then to a separate "trap canister" on a top-loading scale. Any HC emissions that escape from the vehicle's canister are captured in the trap canister, and measured at a 0.01 g (10 milligram) precision. The trap canister (a 1 Liter Ford model) is periodically purged and maintained at a "dry" condition so that it captures all of the vehicle's escaping emissions. This assumption is probably violated during the high volatility tests where there are 30 grams of daily emissions, but this is not a concern at this time.

Test Elements for E-77-2 - The following flowchart (Figure A-6) displays the various elements utilized during the testing of the various vehicles and fuels during this program. Details of each of the four basic tests follow the flow chart.

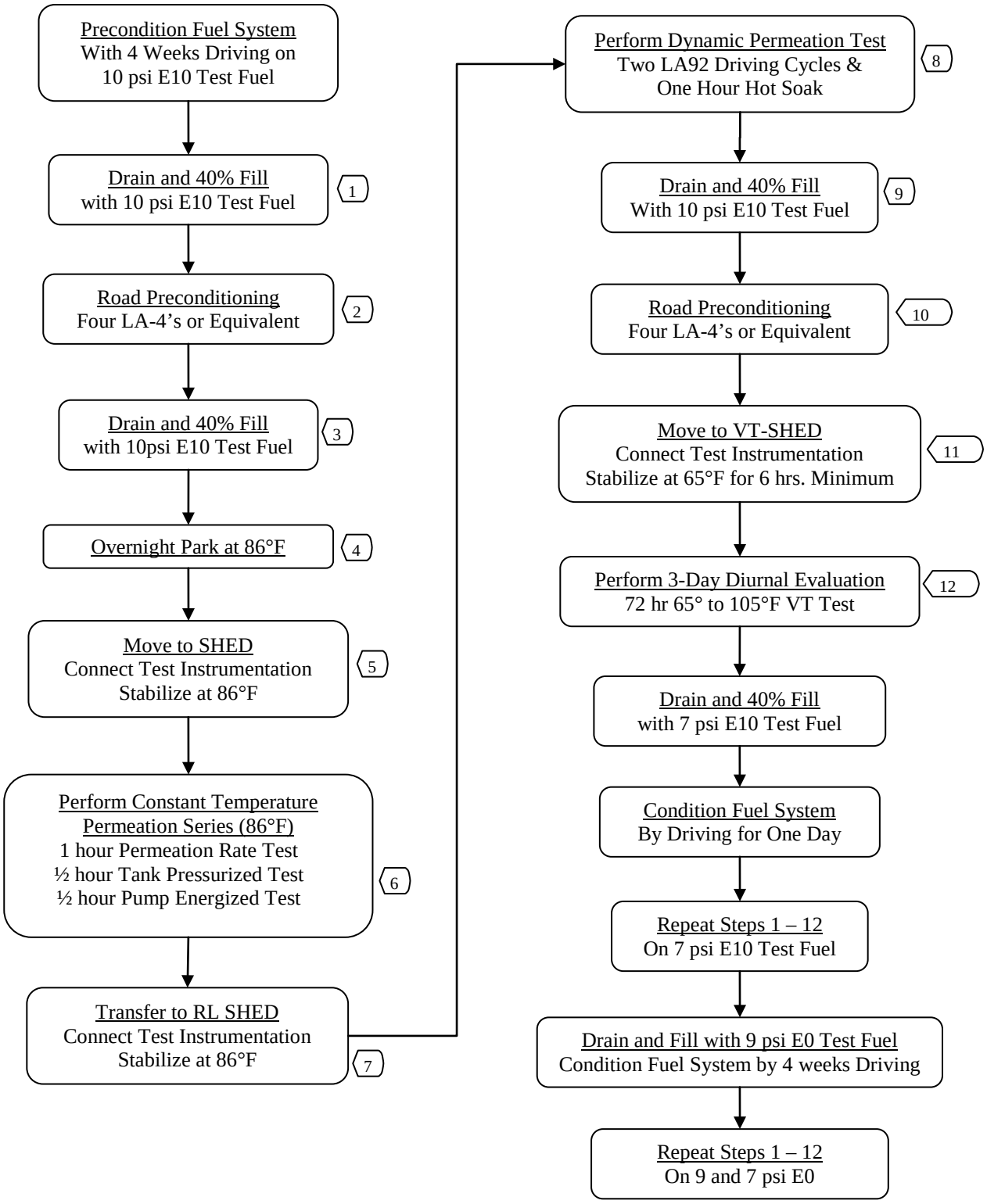


Figure A-6. Testing Flow Chart

APPENDIX B

TEST PROCEDURES

Test Procedures – There are four basic tests in the E-77-2 test protocol.

1. Static Permeation Rate (Includes checks for vapor and liquid leaks)
2. Running Emissions (Dynamic Test)
3. Hot Soak
4. Diurnal

Each is described in detail below.

1. Static Permeation Testing

The constant temperature (static) permeation rate is measured in a traditional SHED (constant temperature) in the following manner.

A. The fuel tank is drained and filled to 40% tank capacity with the test fuel.
B. The day before testing, the vehicle is driven over four road trips of 7.5 miles each to precondition the canister.[7] (These drives are similar to the LA-4.)
C. Upon return from the road pre-conditioning, the fuel tank is drained and filled to 40% tank capacity with the test fuel.[8]
D. Vehicle is parked for 18-22 hours in a controlled temperature environment at test temperature (86ºF).
E. The vehicle is then moved (without starting) into the test (86ºF) SHED.
F. The canister vent is connected to the SHED bulkhead fitting which routes the vapor to the trap canister outside the SHED.
G. The tank system pressurization hose is connected.
H. The fuel pump electrical connection is connected.
I. The SHED is sealed, the inside temperature is allowed to stabilize and the test is started. Continuous total hydrocarbon (THC) measurements are made using a FID. Ethanol, methanol and R134a concentrations are measured using an INNOVA analyzer. All measurements are made at least every minute for one hour to determine the stabilized permeation rate.
J. At the end of the static test (60 minutes), the vehicle's vapor system is pressurized to 5 inches of water for thirty minutes. Measurements are made to quantify vapor leaks as determined by a change in the SHED uncorrected mass.
K. The fuel pump is then energized for 30 minutes while maintaining the 5 inches of water on the vapor system. Liquid leaks are quantified as determined by a change in the SHED concentrations.

The purpose of steps J and K above is to validate that the permeation rate measurement was made without the presence of any leak – either liquid or vapor.

[7] This conditioning can be done in the laboratory on a chassis dynamometer if proper attention is paid to underbody cooling and unrepresentative fuel tank temperatures are avoided.

[8] Vehicles with ORVR systems will add the refueling vapors to the canister. This is OK.

2. Running Loss Test (Dynamic Test)

A. The vehicle is placed in the RL-SHED and prepared for test. (The fuel level and condition for the dynamic test is the fuel remaining after completion of the static test – 40% fresh fill of the appropriate test fuel.)
B. Outside air source for the engine is connected.
C. Vehicle exhaust is connected.
D. Fuel tank thermocouple is connected.
E. Canister vent is connected to the SHED bulkhead fitting which routes the vapor to the trap canister outside the SHED.
F. Vehicle is allowed to stabilize in the RL-SHED at test temperature (86°F) for a minimum of 12 hours – preferably overnight.
G. Two cycles of the Unified Cycle (LA-92) driving schedule (48 min.) are driven while measuring the mass emissions in the SHED. Vehicle is allowed to idle (in drive) for 30 seconds between the two cycles. Ambient air temperature is maintained (to the extent possible) at 86°F. Fuel tank surface temperature is monitored during vehicle operation. It should increase during the drive from 10 to 18°F to simulate expected on-road temperature increase. Measured mass emissions are corrected using the INNOVA data for the ethanol, methanol and refrigerant emissions.

3. Hot Soak[9]

This procedure is executed immediately following the Running Loss Test procedure described above.

A. Engine is turned off, transmission selector is placed in park, and driver exits the enclosure, using the double door air lock, taking care to minimize any air exchange between the laboratory and the SHED. This starts the one hour "hot soak" period.
B. Measurement of mass emissions in the SHED are continued for another 60 minutes (until time = 108 minutes), correcting for the ethanol, methanol and refrigerant mass using the INNOVA instrument data. This ends the hot soak. Hot soak emissions are calculated as the net difference for the one hour hot soak ($CorrMass_{108} - CorrMass_{48}$ minus the 86°F static hourly rate, all mass rates in mg/hour).

4. Diurnal Test

A. The fuel tank is drained and filled to 40% tank capacity with the test fuel.
B. The day before testing, the vehicle is to be driven over four road trips of 7.5 miles each to precondition the vehicle and the canister.
C. Upon return from the road pre-conditioning, the fuel tank is drained and filled to 40% tank capacity with the test fuel.
D. The vehicle is parked for 18-22 hours in a controlled temperature environment at the initial diurnal test temperature (65ºF).
E. The SHED is sealed, allowed to stabilize at the 65°F temperature and the 3-day California Diurnal Test is started.
F. "Continuous" (every 30 seconds) total hydrocarbon measurements are made using a Flame Ionization Detector (FID). Ethanol, methanol and R134a (refrigerant)

[9] As defined here, the "hot soak" is the temporary increase in emission rate caused by the vehicle's immediately preceding operation. It is the increase in the SHED mass (corrected for EtOH, MeOH and R-134a) over the one hour period minus the previously established "static" permeation rate.

concentrations are measured using an INNOVA analyzer, at least every 10 minutes for the duration of the test (72 hours).

Static Permeation Test – Leak Validation

If a leak is detected during either the vapor system pressure portion (Step J) or the pump energized portion (Step K) of the Static Permeation Test procedure, it calls into question whether the permeation rate measurement accurately reflects fuel system permeation or if instead a combination of permeation and the implied leak was measured. If a leak is confirmed, the permeation rate measurement is called into question, and an investigation, possible remedy, and retest is indicated.

The permeation rate measurement must be corrected for the FID's ethanol misrepresentation, and the presence of non-fuel HC (methanol and refrigerant). The leak check, however, is made using the change in mass increase in the SHED using the uncorrected FID mass calculation as the determinate. The corrections for ethanol, methanol and refrigerant were found to be introducing "noise" into the trace that was being misinterpreted as leak(s).

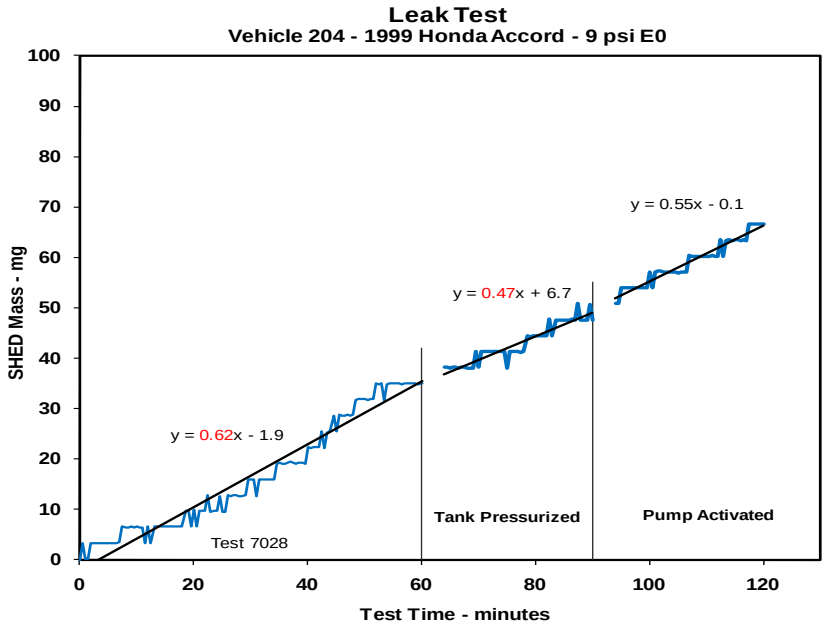


Figure A-7. Leak Test

Figure A-7 above represents the calculations made during the inspection of data from a successful test. EXCEL's© "SLOPE" function is used to calculate the linear regression values based on the FID calculation for mass for: Time 0 to 60 minutes, Time 64 to 90 minutes, and Time 94 to 120 minutes. A four- minute gap was included between each sequence to establish the new mass emission rate during the "pressure on," (T_{60} to T_{90}), and the "pump energized" periods.

The slope of 0.47 for the "Tank Pressurized" period in the example above is compared to the slope of 0.62 calculated for the permeation rate (or hot soak) period. Since the "Tank Pressurized" slope is not more than 10% higher than the hot soak permeation rate, it is assumed

that there is no leak present. A similar comparison is made for the slope determined during the "pump on" period. The choice of a 10% allowance is arbitrary and is used here to allow for normal and unavoidable test variation.

For tests in which the above procedure determines that no leak is present, a value of zero is reported in the test summary for the leak results. If a positive value is reported, it calls that test into question, and an investigation, possible repair, and retest is indicated.

Static Permeation Rate Determination

The static permeation rate is determined based on a linear regression through the individual data points (30 second data) corrected fuel results from the first 60 minutes of testing, as illustrated in Figure A-8.

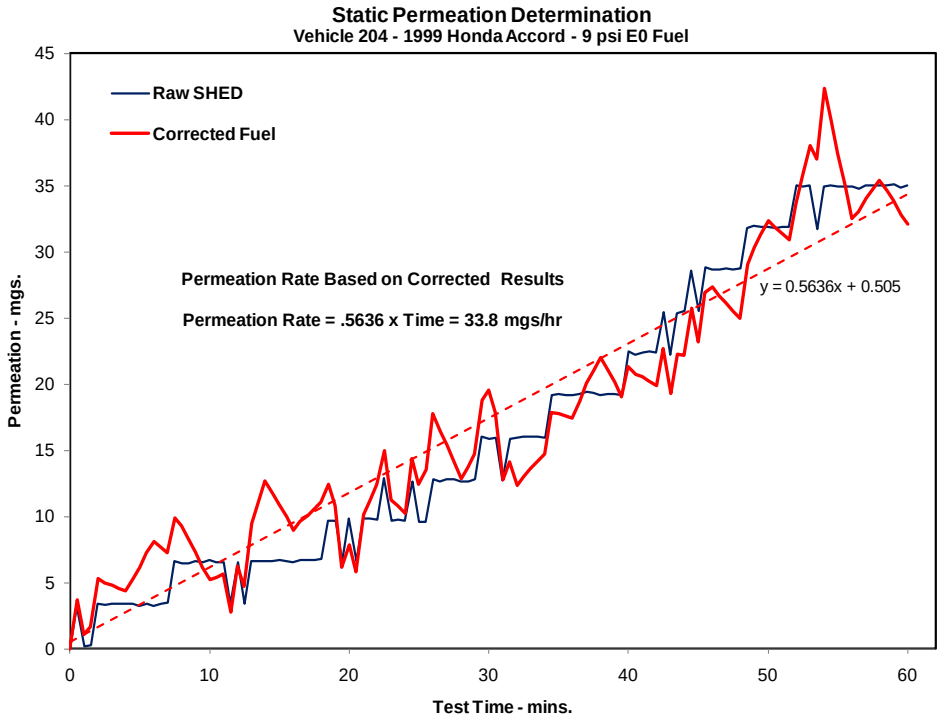


Figure A-8. Static Permeation Determination

In this example, the static permeation rate is 33.8 mg/hr.

Dynamic (Running Loss) and Hot Soak Test

The preceding section addressed the concepts of separating the permeation emissions from the tank venting emissions, and establishing the presence or absence of leaks. The second part of this study includes a dynamic test to measure the permeation and tank venting emissions during vehicle operation ("running losses") and the temporary condition following vehicle operation known as the "hot soak."

This is considered a "dynamic" test because the vehicle is driven and the fuel and vapor system temperatures rise during the test. The ambient temperature in the Running Loss SHED during

test was held constant at 86°F, while the vehicle's fuel system temperature rose during the test. Two 1435 second (23.9-minute) LA-92 driving cycles were performed consecutively during the running loss measurements with a 30-second idle in between. During this test, tank fuel temperature was expected to rise by an average approximately 18°F above the initial ambient temperature. The running loss air handling system included a proportional speed under-car blower operated as a slave to dynamometer speed. This apparatus was used during running loss testing with minor tuning for specific vehicles. It is capable of reasonable fuel tank temperature control without additional input. Each vehicle was fitted with a surface-mount thermocouple at the front of the fuel tank, located at approximately the 1/8th fill level to measure the fuel liquid temperature. No attempt was made to follow a predefined fuel tank temperature profile (FTTP) in this program. Fuel temperatures were recorded, and results are available in the real-time records.



Figure A-9. Running Loss SHED

Vehicle running loss emissions are measured in a special version of a SHED known as a Running Loss SHED (RL-SHED), shown in Figure A-9. Special features of the RL-SHED include a sealed chassis dynamometer for simulating vehicle driving loads, a sealed outside air supply for engine intake, a sealed exhaust conduit for engine exhaust, and an under-chassis fan for simulating underbody air flow as described above. A vehicle is operated inside the RL-SHED over a chosen driving cycle. The increase in HC emissions inside the enclosure are measured and calculated as mass emissions per 40 CFR §86.163-96. Vehicle testing in an RL-SHED is complicated by several factors, including:

1. The engine must be supplied with external induction air.
2. The exhaust must be conducted externally without any leaks.
3. The load supplied to the vehicle through the chassis dynamometer must not create or allow external leaks.
4. The internal SHED temperature must be maintained while sizable heat is rejected to the ambient by the running engine and exhaust.

5. The cooling air supplied to the radiator must be modulated to represent the vehicle's road speed.
6. The underbody (and especially the fuel system) temperature should represent the rate of rise experienced by a real road-drive.

Canister vent losses were isolated from permeation emissions using the technique described previously. The vehicle's carbon canister fresh air vent was connected to the outside of the RL-SHED using a leak-tight Teflon® hose connected to a small carbon "trap" canister located on a top-loading precision scale. The scale precision was 0.01 grams (10 milligrams). There were no tank venting emissions measured on any of the running loss test measurements. All of the vehicles appeared to be actively "purging" the vehicle's control canister and drawing fresh air during the test. If there were any emissions from the vehicle's canister, as might have occurred if there were no vehicle purge or if very high volatility fuels with excessive vapor generation were used, it would have been measured.

The Running Loss Driving Cycle consisted of two cycles of the "Unified Driving Cycle," otherwise known as the LA-92. A velocity versus time plot for one cycle is shown in Figure A-10.

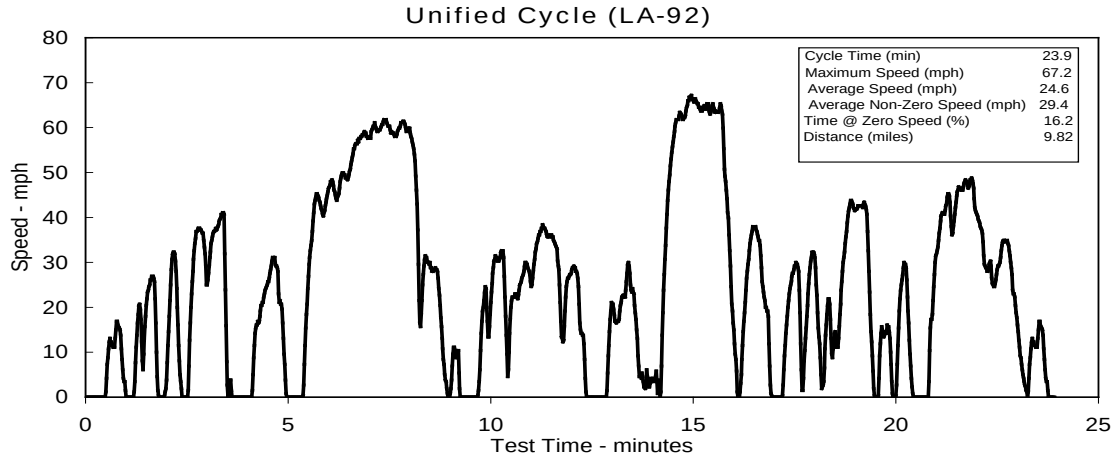


Figure A-10. Running Loss Driving Cycle

The LA-92 cycle takes 24 minutes to complete, and covers 9.8 miles, with many speed changes. Two back-to-back cycles were driven, the first as a "cold start," and the second following a 30 second vehicle idle. The "cold start" condition was created by soaking the vehicle for a minimum of 18 hours at 86°F, moving it to the stabilized 86°F RL-SHED, making the test connections, and then waiting a minimum of one hour before the initial start and run.

The SHED emissions were measured during the 48 minutes of engine operation, and then continuously for one hour after the engine was turned off. This one hour, engine-off duration was the "hot soak" period. The total test time is 1 hour and 48 minutes.

Figure A-11 shows results from the 9 psi E0 fuel test on Vehicle 204. The horizontal axis is test time in minutes, and the vertical axis is the HC mass measured in the RL-SHED during the test period.

The engine was shut off at the end of the second LA92 drive cycle (~48 minutes), and the analysis system continued to measure the HC emissions in the SHED for the next 60 minutes. This represented the "hot soak" portion of the test.

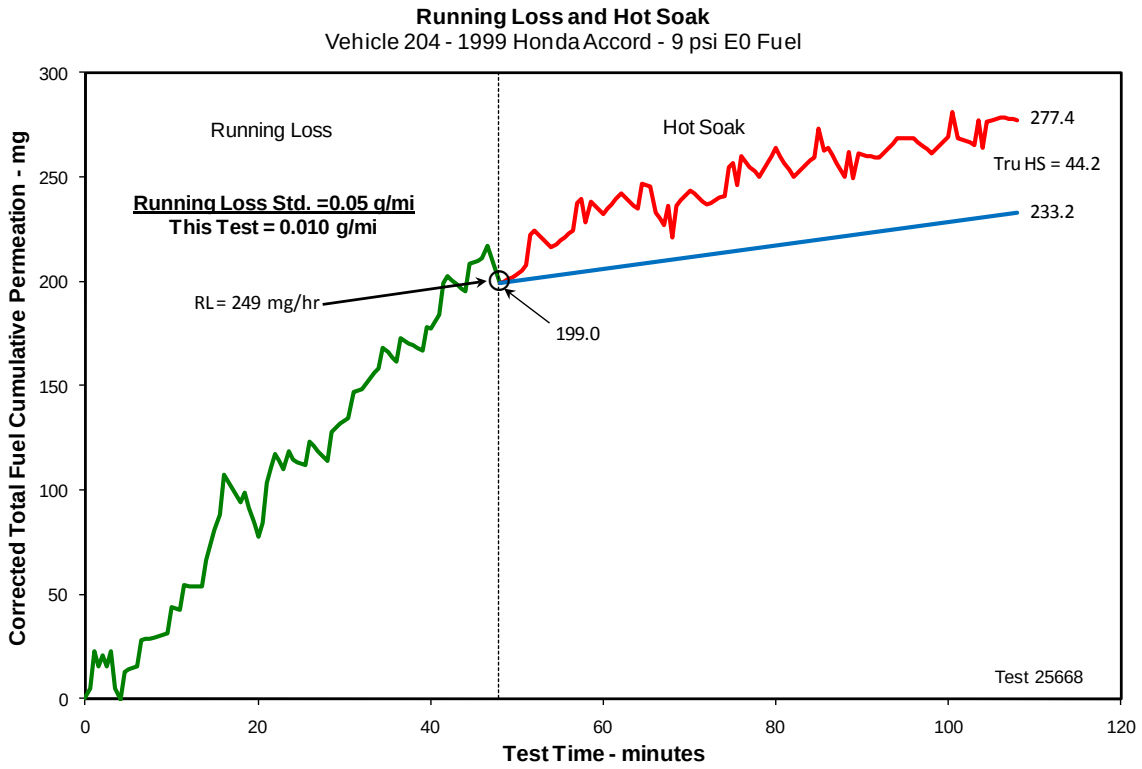


Figure A-11. Running Loss Test

The "True" Hot Soak

The traditional hot soak is determined from the increase in SHED emissions as measured for one hour following a prescribed drive to heat up the vehicle (2 LA-92 cycles during the Running Loss Test). Hot soak emissions, however, have two components: that caused by the elevated temperature resulting from the drive, and that resulting from one hour of static permeation.

To separate these two components and determine the "true" hot soak emissions, the following procedure was used. "Traditional" hot soak emissions were first calculated by subtracting the "start of hot soak" cumulative SHED HC value (i.e., 199 mg @ t = 48 minutes) from the final cumulative SHED HC value (i.e., 277.4 mg @ t = 108 min.). This resulted in a cumulative SHED HC value of 78 mg for the 1 hour hot soak. The previously determined static permeation value (i.e., 33.8 mg for a 1 hour hot soak test- see Figure A-8) was then subtracted to arrive at the "true" hot soak value of 44.2 mg.

In Figure A-11, the static permeation rate is superimposed as a solid blue line on the plot from the starting point of the hot soak until its end (one hour). While the "traditional" hot soak would

be calculated as 78 mg (277 mg – 199 mg), the "true" hot soak is determined as 44.2 mg (277.4 mg - 233.2 mg). True hot soak values reported here were determined in this manner.

Diurnal Test

Diurnal permeation was determined by subjecting the vehicle to a three-day period in a temperature-controlled SHED while continuously recording the total HC every 30 seconds. The SHED environmental temperature was varied from 65°F to 105°F per the California Diurnal Test protocol. Canister vent losses were isolated from permeation emissions using the technique described previously. The vehicle's carbon canister fresh air vent was connected to the outside of the RL-SHED using a leak-tight Teflon® hose connected to a small carbon "trap" canister located on a top-loading precision scale. The scale precision was 0.01 grams (10 milligrams).

ATL's Speciation Method

ATL has developed a hydrocarbon speciation method that is functionally equivalent to the dual-gas chromatograph (GC) AQIRP method. The AQIRP, or "Auto/Oil Program," test method was first documented in two SAE papers,

1. SAE 920320, Advanced Emission Speciation Methodologies for the Auto/Oil Air Quality Improvement Research Program -I. Hydrocarbons and Ethers; and

2. SAE 920321, Advanced Emissions Speciation Methodologies for the Auto/Oil Air Quality Improvement Research Program – II. Aldehydes, Ketones, and Alcohols

A later update to the HC and Oxygenates procedures was published as:

SAE 930142, Improved Emissions Speciation Methodology for Phase II of the Auto/Oil Air Quality Improvement Research Program--Hydrocarbons and Oxygenates

(See also, for reference, ARB's SOP NO. MLD 115, "Procedure for the Determination of Ethers and Alcohols in Gasoline by Gas Chromatography", January 2003, and SOP NO. MLD 118, "Procedures for the Detailed Hydrocarbon Analysis of Gasolines by Single Column High Efficiency (Capillary) Column Gas Chromatography", August 1997).

Instrumentation demands are simplified, and overall analysis time is shortened; yet high resolution and sensitivity are still achieved. In this single-GC/dual column method, all components are separated using on column type and temperature program. Analysis time for a cycle is 65 minutes. Each exhaust or evaporative gas sample is simultaneously injected (using a single sampling from the bag) into two identical columns present in the GC. A Varian Model 3400 GC is used for HC analysis. The GC is equipped with a dual temperature-controlled Valco 6-port valve injector; dual flame ionization detectors (FID), and dual 60 meter x 0.32-mm ID fused silica capillary columns with 1.0µ polydimethylsiloxane stationary phase (J&W DB-1). One of the injectors uses an 85 µL sampling loop for low sensitivity analysis of C_1-C_{12} while the other injector either uses a 1000 µL loop for high sensitivity analysis of C_4-C_{12} (for simultaneous low/high sensitivity analysis of a single bag sample). Column A contains an 85µl sample loop (splitless injection) that provides an injection volume that is small enough to allow resolution of the C1 through C4 hydrocarbons while large enough to retain the highest sensitivity possible.

Column B receives a 1000µl splitless injection, providing higher sensitivity for components eluting after isobutane. Quantitative comparison of two overlap components (butane and isopentane) provides a quality control measure. Data from Column A is used to detect and quantitate the 12 earliest eluting hydrocarbons with detection limits of 15-25 ppb_vC corresponding to 0.2-0.3 mg/mi hydrocarbon for FTP stages 1 and 3, and 0.3-0.5 mg/mi for FTP stage 2. Data from Column B gives detection limits 0.017-0.04 mg/mi HC for components eluting after isopentane (18^{th} in elution order). The components eluting between the 9^{th} and 18^{th} in elution order have detection limits ranging between the levels listed above for each column.

The advantage of this approach is that, even for relatively clean vehicles, essentially all of the first 12 species are typically present at levels exceeding the Column A detection limit. Those speciated components that are below the first column detection limit tend to be in the molecular weight range best suited for the 1000µl injection analysis, which provides the limits 0.017-0.04 mg/mi HC for components eluting after isopentane (18^{th} in elution order), where additional sensitivity is needed. In previous work that applied this analysis approach, detection limits were determined to be between 0.02-0.06 mg/mi for the toxics 1,3-butadiene and benzene.
ATL's hydrocarbon method uses Varian 3600 GCs with dual injectors, columns, and flame ionization detectors, allowing two similar analyses to be run simultaneously, as mentioned above. A Varian Star PC-based (using Microsoft Windows™) data system is used for data acquisition. Custom-made software is used for peak identification and converting data into a Microsoft Excel™ spreadsheet format. A comparison of the total hydrocarbon determined using the GC versus the CVS ("speciation recovery") is used as a quality control measure, and ATL routinely achieves hydrocarbon speciation recoveries ranging from 93% to 105% for lower emitting vehicles. A 23 hydrocarbon component standard mixture is analyzed at the start of each day on each GC to provide quantifying coefficients and a quality control check on daily reproducibility of instrument performance.

APPENDIX C

FUEL INSPECTIONS

TABLE C-2. CRC E-77-2b FUEL INSPECTIONS

CRC E-77-2b Fuel Inspections			
Data from CRC E-74			
		E0	**E10**
Inspection	Units	Fuel 6	Fuel 7
API Gravity	°API	60.2	58.5
Relative Density	60/60°F	0.7381	0.7447
DVPE	psi	6.95	7.30
Oxygenates--D4815			
MTBE	vol %	0.00	0.00
ETBE	vol %	0.00	0.00
EtOH	vol %	0.00	9.54
O2	wt %	0.00	3.53
Hydrocarbon Composition			
Aromatics	vol %	22.1	24.4
Olefins	vol %	8.0	8.8
Saturates	vol %	70.0	57.3
D86 Distillation			
IBP	°F	99.9	104.0
5% Evaporated	°F	131.9	128.0
10% Evaporated	°F	142.4	133.0
20% Evaporated	°F	156.5	141.0
30% Evaporated	°F	170.6	145.0
40% Evaporated	°F	184.3	153.0
50% Evaporated	°F	197.9	195.0
60% Evaporated	°F	212.4	219.0
70% Evaporated	°F	231.1	241.0
80% Evaporated	°F	259.4	271.0
90% Evaporated	°F	313.6	317.0
95% Evaporated	°F	331.7	330.0
EP	°F	361.0	360.0
Recovery	vol %	97.8	97.8
Residue	vol %	1.3	1.0
Loss	vol %	1.0	1.2
Driveability Index		1120.7	1101.5

TABLE C-2 (CONT'D). CRC E-77-2b FUEL INSPECTIONS

Suppliers Additional Inspections

Fuel	Units	Fuel 6	Fuel 7
Sulfur Content	ppm	29	27
Estimated C/H Ratio		6.2090	6.3323
Est. Net Heat of Combustion	btu/lb	18573	18514
Benzene	vol %	0.90	1.00
Research Octane Number		93.2	94.0
Motor Octane Number		83.8	83.8
(R+M)/2		88.5	88.9

Detailed Hydrocarbon Analysis

Fuel	Units	Fuel 6	Fuel 7
Aromatics	vol %	23.86	24.81
Olefins	vol %	7.52	8.92
Saturates	vol %	67.43	56.21
Unclassified	vol %	1.15	0.86
Ethanol	vol %	0.00	9.20
Benzene	vol %	0.89	1.06
C/H Ratio		6.200	6.092
Oxygen	wt. %	0.008 [1]	3.40
Net Heat of Combustion	btu/lb	18,703	18,016

[1] Contains 0.04 vol % MTBE

Carbon, Hydrogen, and Oxygen

Fuel	Units	Fuel 6	Fuel 7
Oxygen	wt. %	0.008	3.396
C+H	wt. %	99.99	96.60
H	wt. %	13.89	13.62
C	wt. %	86.10	82.98

Net Heat of Combusion -- Btu/lb

Fuel	Units	6	7
Haltermann D3338	Btu/lb	18,573	18,514
Average D3338	Btu/lb	18,578	18,514
Oxygen Corrected D3338	Btu/lb	18,578	17,860
DHA	Btu/lb	18,703	18,016

APPENDIX D

SUMMARY OF E-77-2B PROGRAM TEST RESULTS AND INDIVIDUAL VEHICLE EVAPORATIVE TEST RESULTS

TABLE D-1. CRC E-77-2b PROGRAM TEST RESULTS

Vehicle No.	Fuel	Static Permeation - mg/hr				Dynamic Perm. - mg/hr		Diurnal (65° to 105°) - mg/day		
		86° F	Leaks	105° F	Leaks	RL	TEFVO	Day 1 Perm (Brkthru)	Day 2 Perm (Brkthru)	Day 3 Perm (Brkthru)
206b	E10 - 10 psi	124.9	0.0	314.1	0.0	546.5	165.1	2777 (20.0)	31005 (14.7)	43028 (8.6)
2002	E10 - 7 psi	149.3	0.0	307.9	0.0	436.7	174.9	2582.6 (0.0)	2258.5 (0.0)	2144.0 (1.87)
Nisan	E0 - 9 psi	61.1	0.0	178.8	0.0	365.6	102.5	1500.0 (0.0)	1285.6 (14.6)	1250.8 (30.7)
Altima	E0 - 7 psi	52.0	0.0	118.1	0.0	245.1	68.8	1171.9 (0.0)	931.2 (0.0)	890.3 (1.3)
208b	E10 - 10 psi	37.5	0.0	61.2	0.0	329.5	36.0	794.0 (0.0)	561.4 (5.1)	495.8 (21.7)
2002	E10 - 7 psi	27.2	0.0	51.8	0.0	254.7	77.3	780.6 (0.0)	510.4 (0.0)	449.4 (0.0)
Chevrolet	E0 - 9 psi	37.2	0.0	55.0	9.1	228.0	37.9	777.0 (0.0)	567.2 (0.0)	519.4 (0.0)
Trailblazer	E0 - 7 psi	24.8	0.0	64.5	0.0	124.9	75.0	422.1 (11.3)	419.4 (9.7)	476.0 (9.2)
209b	E10 - 10 psi	28.8	0.0	73.3	0.0	323.6	113.7	535.5 (0.0)	423.5 (0.0)	475.5 (13.0)
2004	E10 - 7 psi	28.6	0.0	54.1	0.0	205.7	24.5	383.1 (0.0)	349.1 (0.0)	323.5 (0.0)
Chrysler	E0 - 9 psi	23.4	5.8	29.5	0.0	144.4	5.0	327.8 (0.0)	250.5 (0.0)	224.3 (0.0)
Stratus	E0 - 7 psi	16.8	1.9/7.9	28.8	0.0	166.2	16.8	354.1 (0.0)	249.7 (0.0)	218.1 (0.0)
210b	E10 - 10 psi	19.9	0.0	70.1	34.1	147.5	60.6	486.5 (8.0)	458.3 (28.3)	441.3 (34.8)
2004	E10 - 7 psi	29.9	0.0	51.9	23.2	218.3	61.8	445.1 (0.0)	388.3 (0.0)	359.1 (0.0)
Chevrolet	E0 - 9 psi	21.2	4.0	33.5	4.8	171.1	19.8	407.8 (0.0)	377.4 (0.0)	358.3 (30.9)
Impala	E0 - 7 psi	18.7	0.0	35.5	0.0	216.0	49.0	270.6 (0.0)	266.6 (0.0)	221.1 (0.1)
213b	E10 - 10 psi	39.2	0.0	106.8	0.0	130.9	0.9	650.6 (0.0)	615.4 (0.0)	700.7 (1.6)
2004	E10 - 7 psi	29.6	0.0	82.2	0.0	243.1	60.5	602.8 (0.0)	577.7 (0.0)	588.9 (0.0)
Dodge	E0 - 9 psi	14.7	0.0	34.5	0.0	203.1	14.5	346.3 (0.0)	328.4 (0.0)	292.8 (0.0)
Ram 1500	E0 - 7 psi	21.1	0.0	35.3	0.0	135.1	12.2	357.8 (0.0)	283.3 (0.0)	276.5 (0.0)
222b	E10 - 10 psi	3.7	0.0	7.4	8.3	73.1	0.0	104.1 (1.7)	79.7 (16.0)	73.4 (30.2)
2004	E10 - 7 psi	12.1	0.0	16.3	0.0	67.1	0.0	99.6 (0.0)	104.0 (0.0)	84.0 (0.0)
Ford	E0 - 9 psi	3.1	0.0	5.8	0.0	45.5	0.0	77.4 (0.0)	41.9 (0.0)	57.9 (0.0)
Focus	E0 - 7 psi	3.4	0.0	6.4	0.0	128.8	5.4	58.6 (0.0)	39.0 (0.0)	38.8 (0.0)

Tier 1	Vapor Leak
Near Zero	Liquid Leak
Zero Evap	

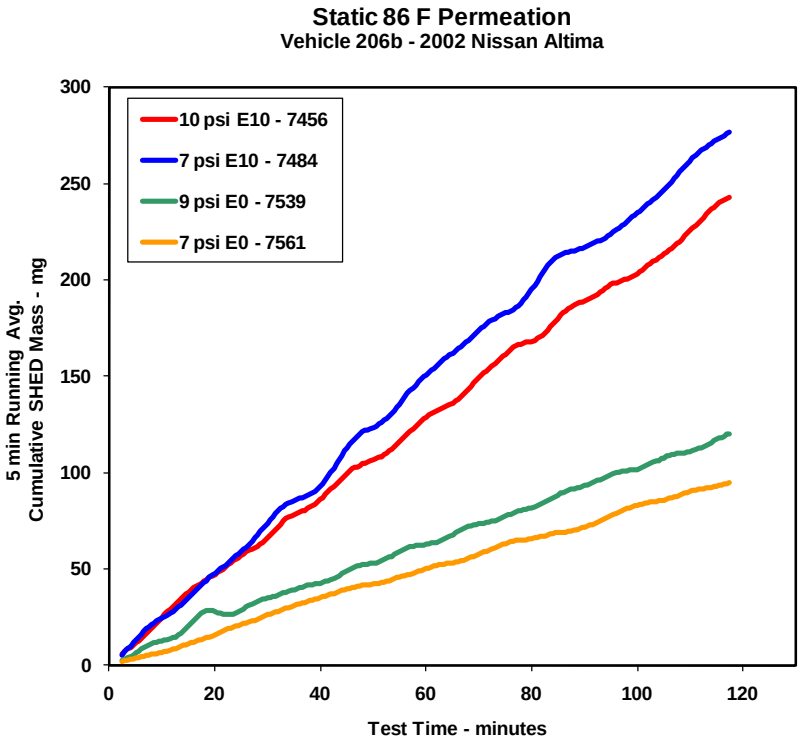
Individual Vehicle Evaporative Performance on the Various Fuels

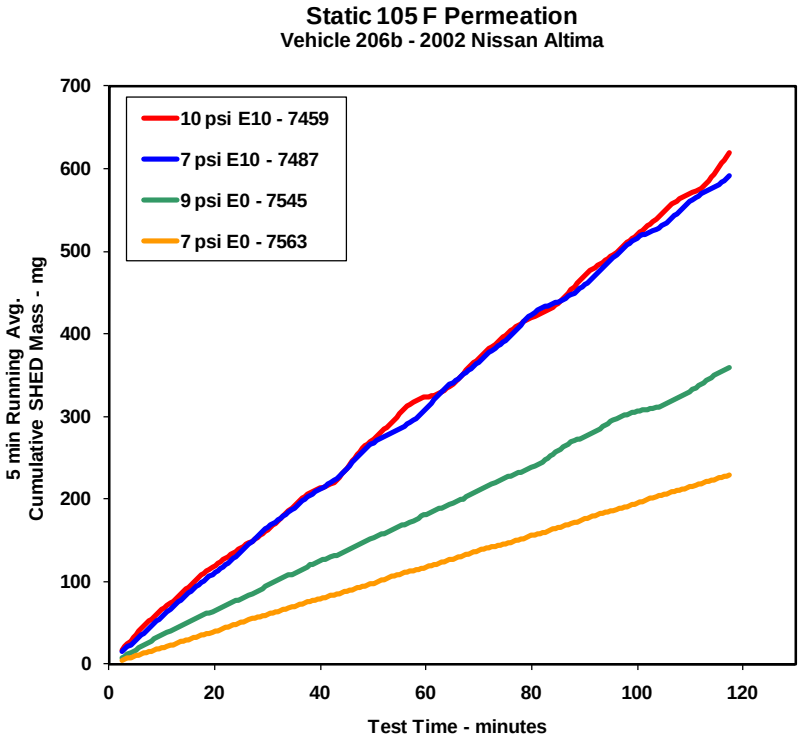
Vehicle 206b – 2002 Nissan Altima

Veh	Fuel psi/EtOH	Test	Type	Date	Test#	Corrected Permeation mg/hr	SHED Results mg/day (Corrected)	Canister Loss g
206b	10.0/E10	Static (86)	Perm	01/28/09	7456	124.9		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	01/29/09	7459	314.1		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Dynamic	RL	01/30/09	25753	546.5		0.00
			TEFVO			165.1		10.59
		72 DHB	65-105	03/03/09	7476			
		Day 1					2776.6	20.00
		Day 2					31004.6	14.70
		Day 3					43028.2	8.60
	7.0/E10	Static (86)	Perm	03/11/09	7484	149.3		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	03/12/09	7487	307.9		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Dynamic	RL	03/13/09	25760	436.7		0.00
			TEFVO			174.9		0.31
		72 DHB	65-105	03/24/09	7495			
		Day 1					2582.6	0.00
		Day 2					2258.5	0.00
		Day 3					2144.0	1.87
	9.0/E0	Static (86)	Perm	05/06/09	7539	61.1		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	05/07/09	7545	178.8		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Dynamic	RL	05/08/09	25775	365.6		0.00
			TEFVO			102.5		0.00
		72 DHB	65-105	05/19/09	7551			
		Day 1					1500.0	0.00
		Day 2					1285.6	14.60
		Day 3					1250.8	30.70

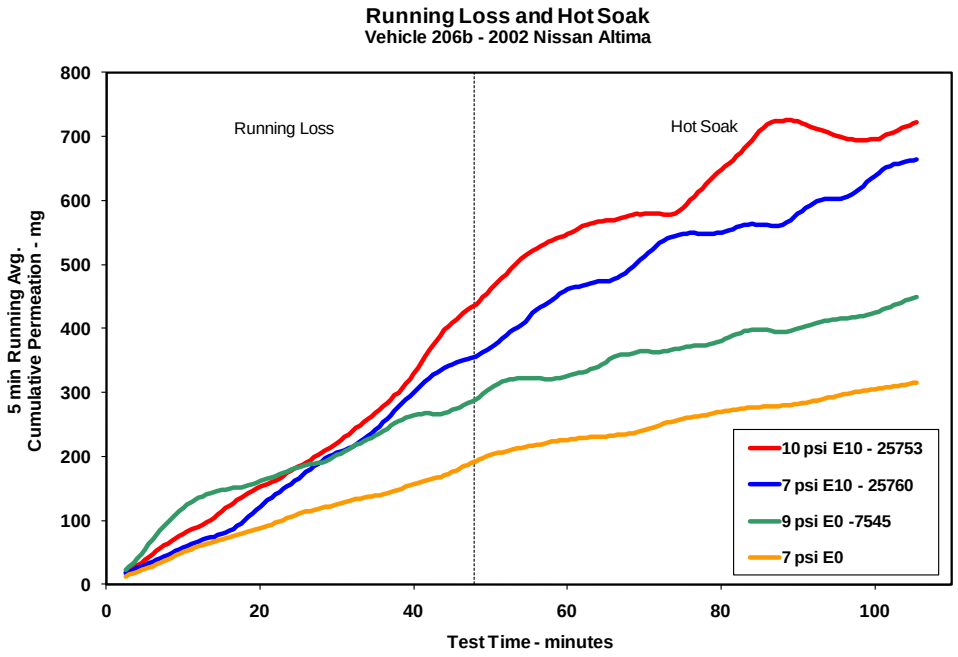
7.0/E0	Static (86)	Perm	06/02/09	7561	52.0		0.00
		Press. Incr.			0.0		
		Prs+Fuel Incr.			0.0		
	Static (105)	Perm	06/03/09	7563	118.1		0.00
		Press. Incr.			0.0		
		Prs+Fuel Incr.			0.0		
	Dynamic	RL	06/04/09	25780	245.1		0.00
		"True" HS			68.8		0.13
	72 DHB	65-105	06/09/09	7567			
	Day 1					1171.9	0.00
	Day 2					931.2	0.00
	Day 3					890.3	1.30

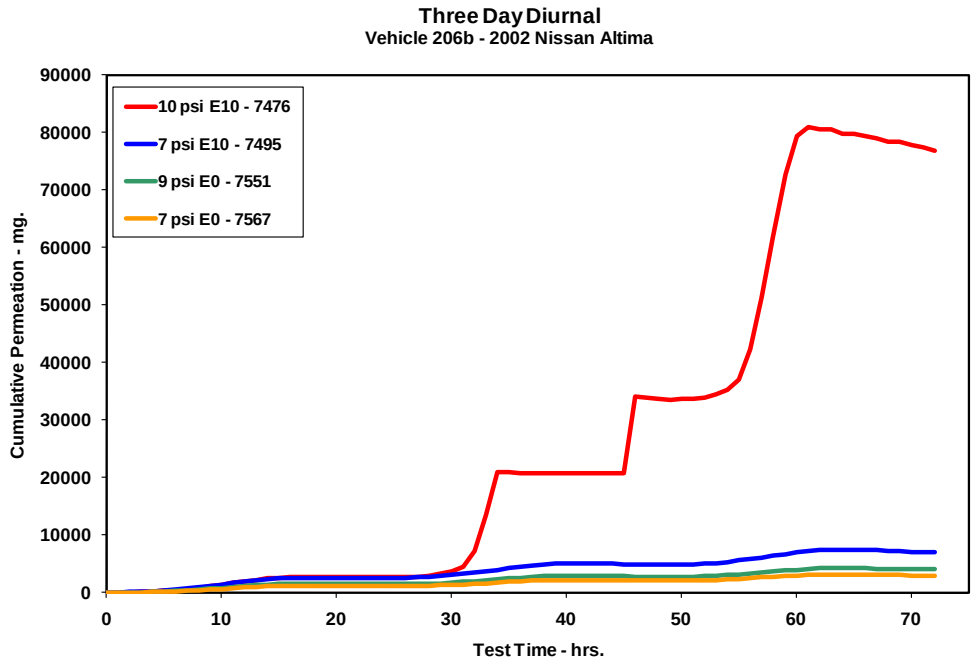
Vehicle 206b – 2002 Nissan Altima





Vehicle 206b – 2002 Nissan Altima (cont.)



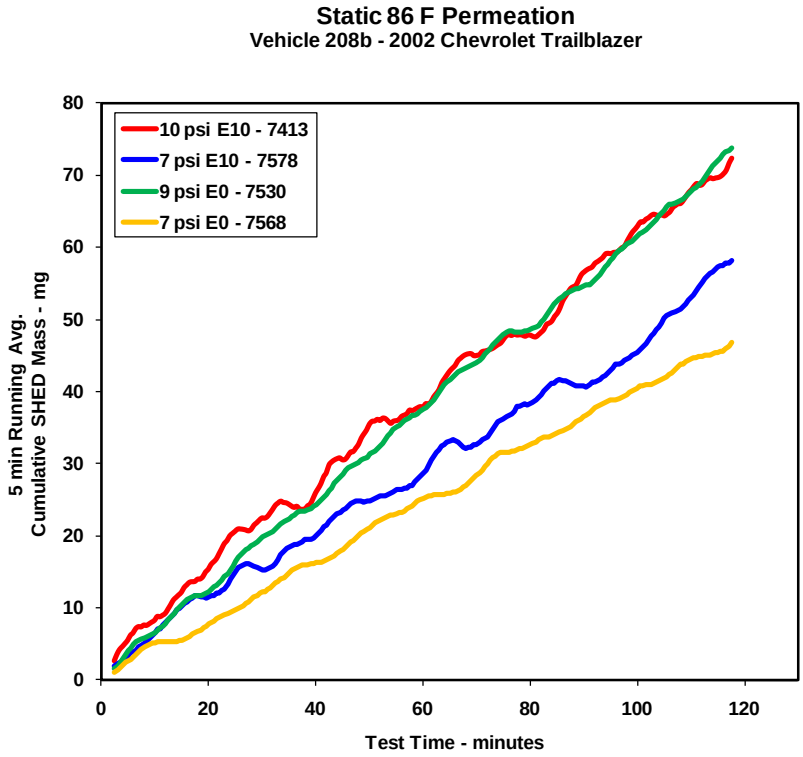


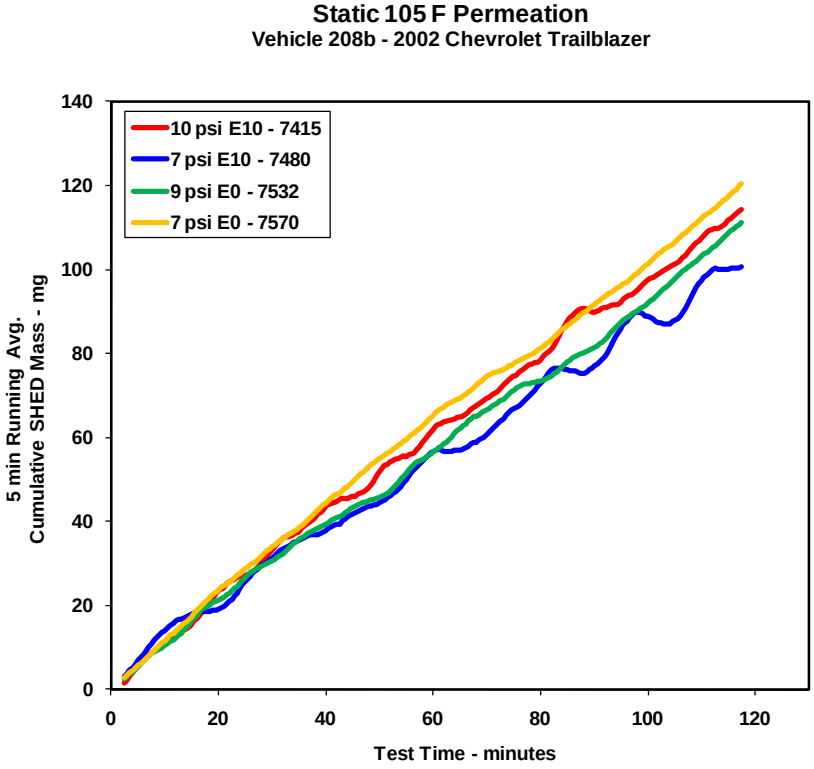
Vehicle 208b – 2002 Chevrolet Trailblazer

Veh	Fuel psi/EtOH	Test	Type	Date	Test#	Corrected Permeation mg/hr	SHED Results mg/day (Corrected)	Canister Loss g
208b	10.0/E10	Static (86)	Perm	12/18/08	7413	37.5		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	12/19/08	7415	61.2		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Dynamic	RL	01/16/09	25744	329.5		0.00
			TEFVO			36.0		0.00
		72 DHB	65-105	02/10/09	7463			
		Day 1					795.0	0.00
		Day 2					561.4	5.10
		Day 3					495.8	21.70
	7.0/E10	Static (86)	Perm	03/04/09	7478	27.2		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	03/05/09	7480	51.8		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Dynamic	RL	03/06/09	25759	254.7		0.00
			TEFVO			77.3		0.00
		72 DHB	65-105	03/17/09	7489			
		Day 1					780.6	0.00
		Day 2					510.4	0.00
		Day 3					449.4	0.00
	9.0/E0	Static (86)	Perm	04/28/09	7530	37.2		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	04/29/09	7532	55.0		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			9.1		
		Dynamic	RL	05/01/09	25771	228.0		0.00
			TEFVO			37.9		0.00
		72 DHB	65-105	05/27/09	7556			
		Day 1					778.0	0.00
		Day 2					567.2	0.00
		Day 3					519.4	0.00

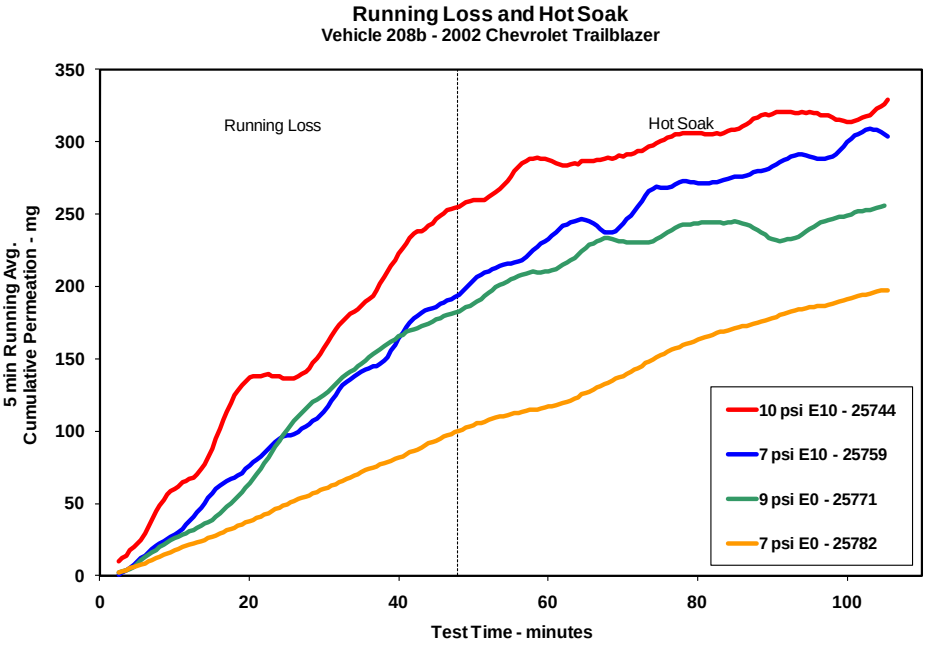
7.0/E0	Static (86)	Perm	06/09/09	7568	24.8		0.00
		Press. Incr.			0.0		
		Prs+Fuel Incr.			0.0		
	Static (105)	Perm	06/10/09	7570	64.5		0.00
		Press. Incr.			0.0		
		Prs+Fuel Incr.			0.0		
	Dynamic	RL	06/11/09	25782	124.9		0.00
		TEFVO			75.0		0.00
	72 DHB	65-105	06/16/09	7575			
	Day 1					422.1	11.30
	Day 2					419.4	9.70
	Day 3					476.0	9.20

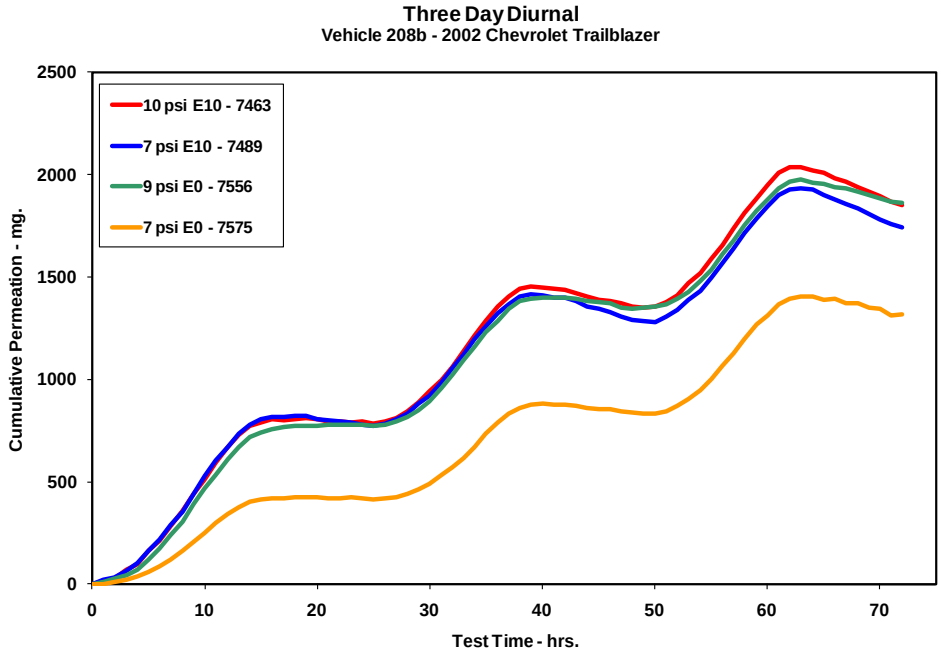
Vehicle 208b – 2002 Chevrolet Trailblazer





Vehicle 208b – 2002 Chevrolet Trailblazer (cont.)



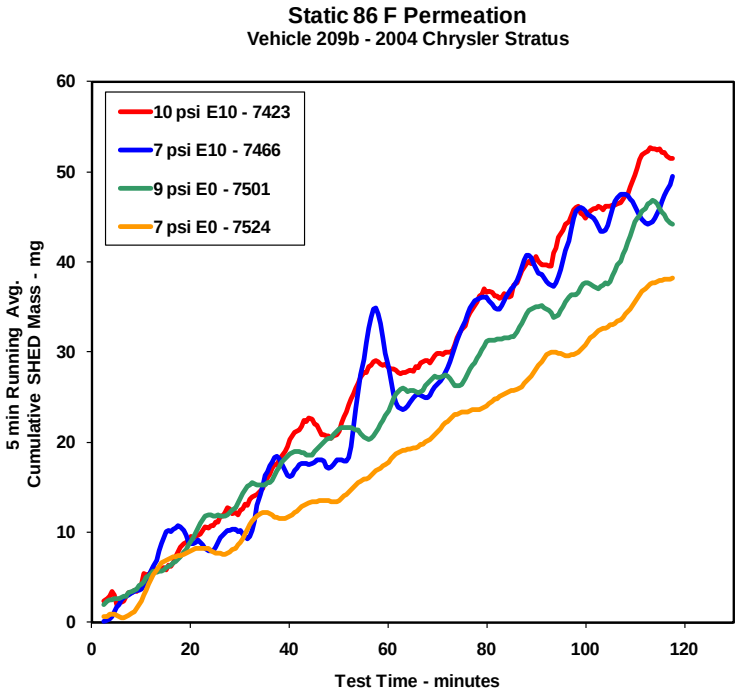


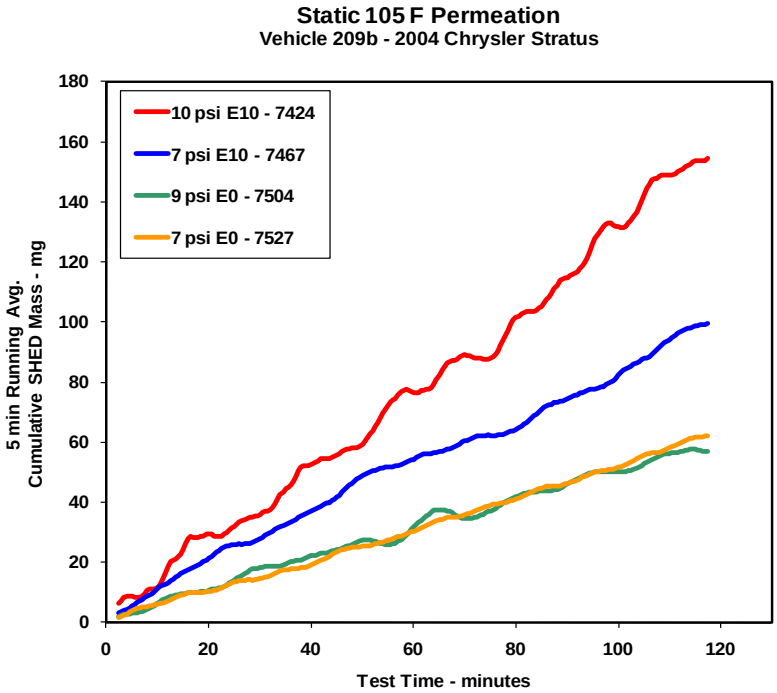
Vehicle 209b – 2004 Chrysler Stratus

Veh	Fuel psi/EtOH	Test	Type	Date	Test#	Corrected Permeation mg/hr	SHED Results mg/day (Corrected)	Canister Loss g
209b	10.0/E10	Static (86)	Perm	12/30/08	7423	28.8		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	12/31/08	7424	73.3		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Dynamic	RL	01/08/09	25742	323.6		0.00
			TEFVO			113.7		0.00
		72 DHB	65-105	02/03/09	7461			
		Day 1					535.5	0.00
		Day 2					423.5	0.00
		Day 3					475.5	13.01
	7.0/E10	Static (86)	Perm	02/12/09	7466	28.6		0
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	02/13/09	7467	54.1		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Dynamic	RL	02/17/09	25755	205.7		0.14
			TEFVO			24.5		0.00
		72 DHB	65-105	02/24/09	7472			
		Day 1					383.1	0.00
		Day 2					349.1	0.00
		Day 3					323.5	0.00
	9.0/E0	Static (86)	Perm	04/01/09	7501	23.4		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			5.8		
		Static (105)	Perm	04/02/09	7504	29.5		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Dynamic	RL	04/03/09	25761	144.4		0.00
			TEFVO			5.0		0.00
		72 DHB	65-105	04/07/09	7508			
		Day 1					327.8	0.00
		Day 2					250.5	0.00
		Day 3					224.3	0.00

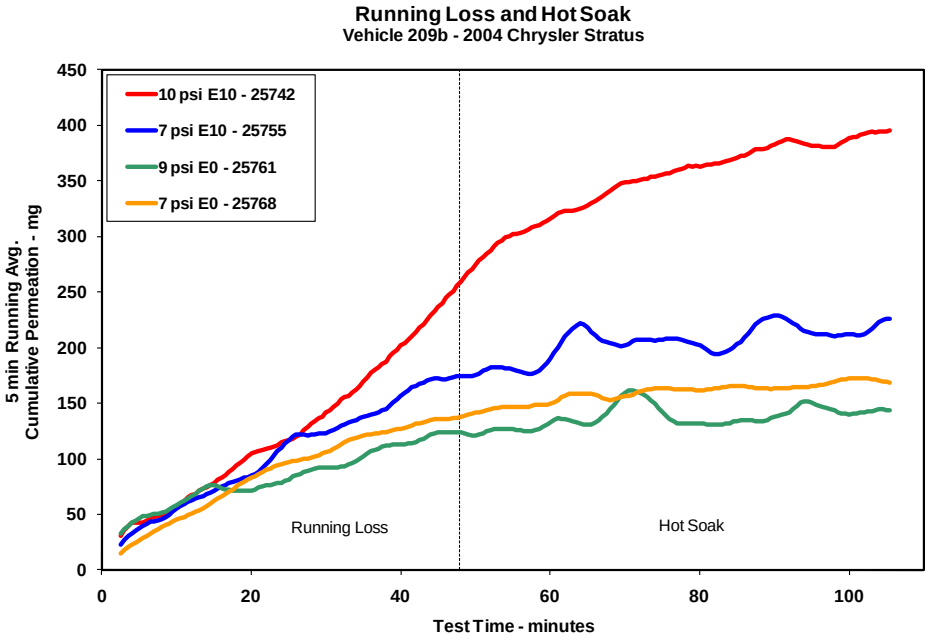
7.0/E0	Static (86)	Perm	04/22/09	7524	16.8		0.00
		Press. Incr.			1.9		
		Prs+Fuel Incr.			7.9		
	Static (105)	Perm	04/23/09	7527	28.8		0.00
		Press. Incr.			0.0		
		Prs+Fuel Incr.			0.0		
	Dynamic	RL	04/24/09	25768	166.2		0.00
		TEFVO			16.8		0.00
	72 DHB	65-105	04/29/09	7533			
	Day 1					354.1	0.00
	Day 2					249.7	0.00
	Day 3					218.1	0.00

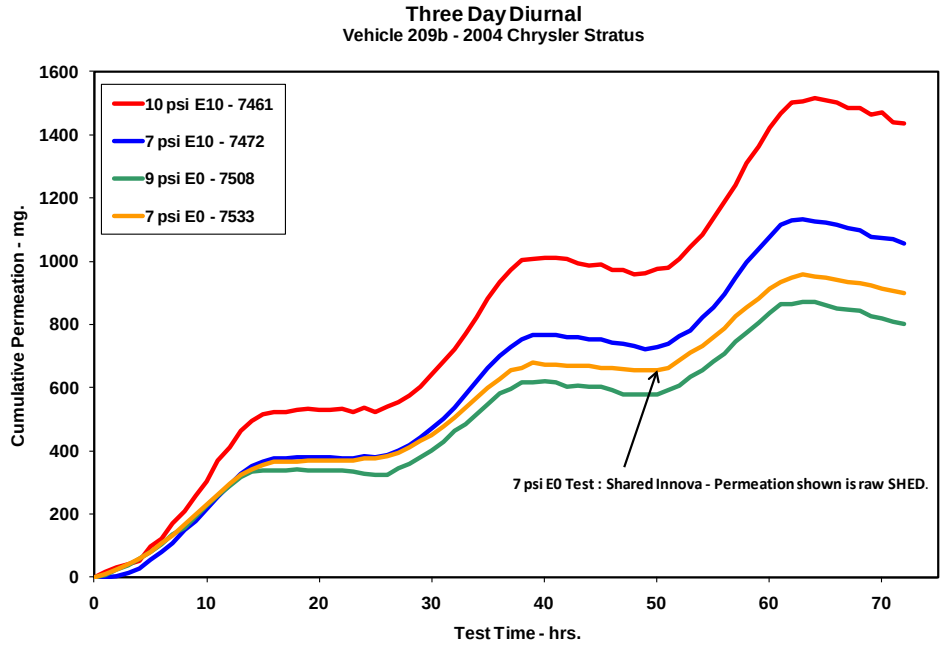
Vehicle 209b – 2004 Chrysler Stratus





Vehicle 209b – 2004 Chrysler Stratus (cont.)



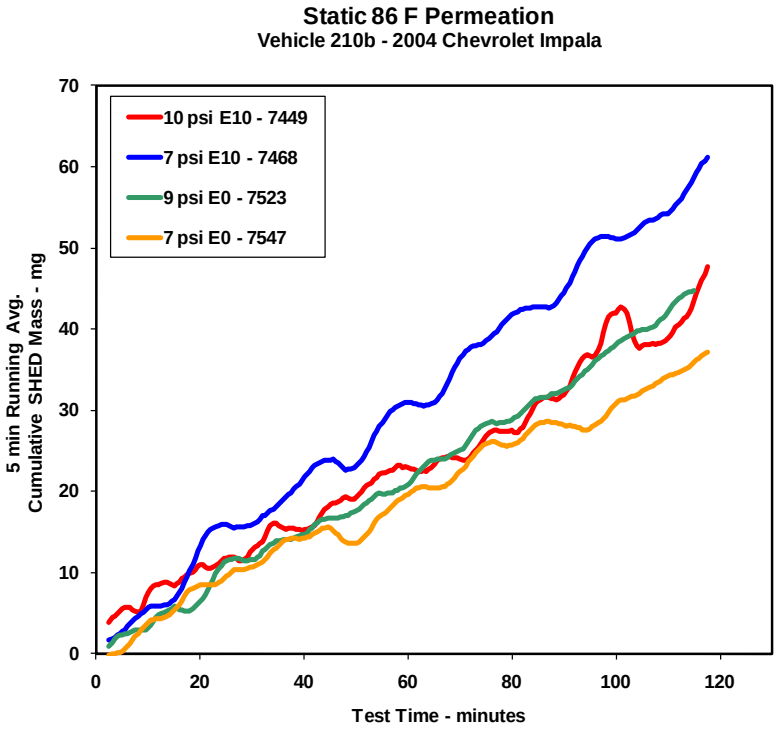


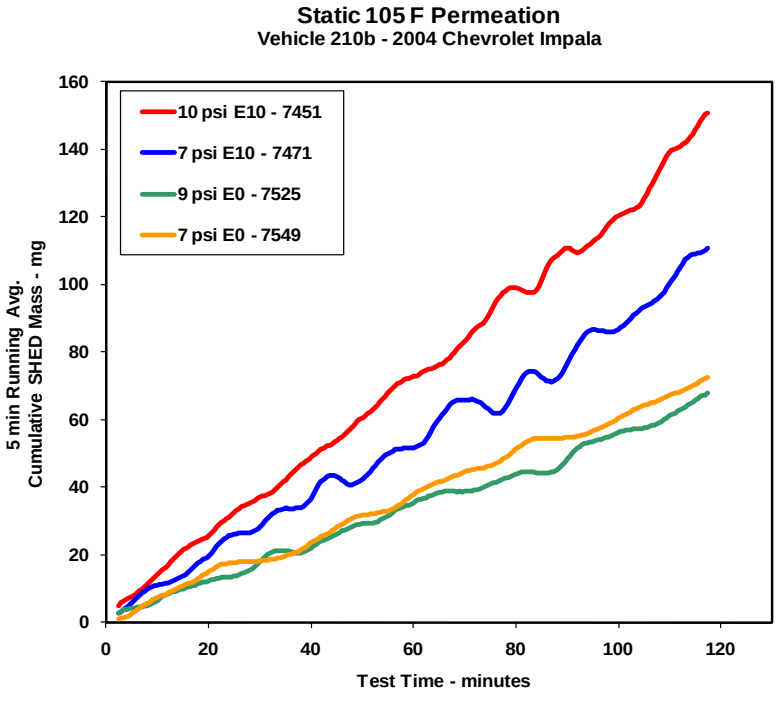
Vehicle 210b – 2004 Chevrolet Impala

Veh	Fuel psi/EtOH	Test	Type	Date	Test#	Corrected Permeation mg/hr	SHED Results mg/day (Corrected)	Canister Loss g
210b	10.0/E10	Static (86)	Perm	01/20/09	7449	19.9		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	01/21/09	7451	70.1		2.87
			Press. Incr.			0.0		
			Prs+Fuel Incr.			34.1		
		Dynamic	RL	01/23/09	25749	147.5		0.00
			TEFVO			60.6		0.00
		72 DHB	65-105	02/04/09	7462			
		Day 1					486.5	8.00
		Day 2					458.3	28.30
		Day 3					441.3	34.80
	7.0/E10	Static (86)	Perm	02/18/09	7468	29.9		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	02/19/09	7471	51.9		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			23.2		
		Dynamic	RL	02/23/09	25756	218.3		0.14
			TEFVO			61.8		0.03
		72 DHB	65-105	03/10/09	7482			
		Day 1					445.1	0.00
		Day 2					388.3	0.00
		Day 3					359.1	0.00
	9.0/E0	Static (86)	Perm	04/21/09	7523	21.2		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			4.0		
		Static (105)	Perm	04/22/09	7525	33.5		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			4.8		
		Dynamic	RL	04/23/09	25767	171.1		0.00
			TEFVO			19.8		0.00
		72 DHB	65-105	04/28/09	7531			
		Day 1					407.8	0.00
		Day 2					377.4	0.00
		Day 3					358.3	30.91

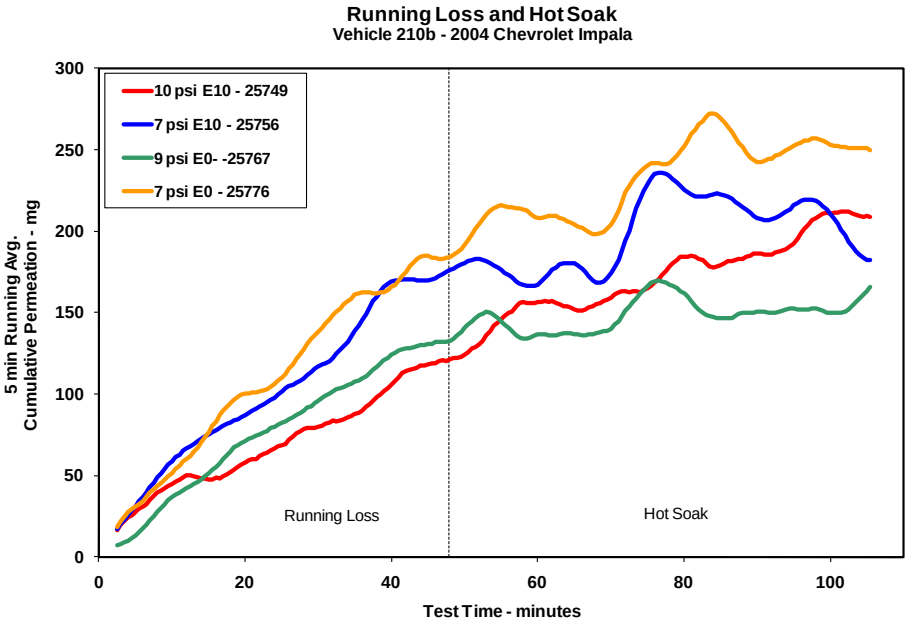
7.0/E0	Static (86)	Perm	05/13/09	7547	18.7		0.00
		Press. Incr.			0.0		
		Prs+Fuel Incr.			0.0		
	Static (105)	Perm	05/14/09	7549	35.5		0.00
		Press. Incr.			0.0		
		Prs+Fuel Incr.			0.0		
	Dynamic	RL	04/15/09	25776	216.0		0.00
		TEFVO			49.0		0.00
	72 DHB	65-105	05/19/09	7550			
	Day 1					270.6	0.00
	Day 2					266.6	0.00
	Day 3					221.1	0.11

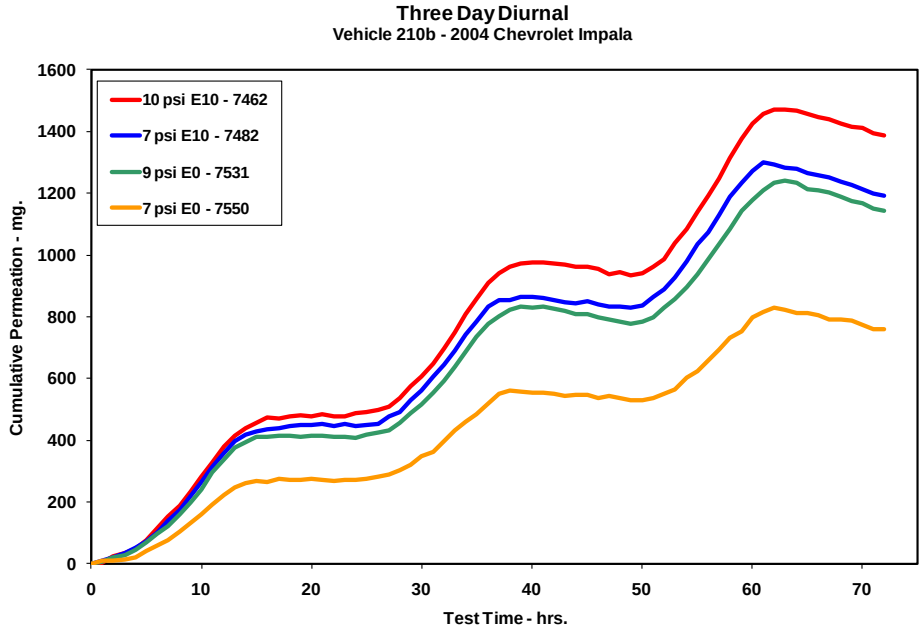
Vehicle 210b – 2004 Chevrolet Impala





Vehicle 210b – 2004 Chevrolet Impala (cont.)



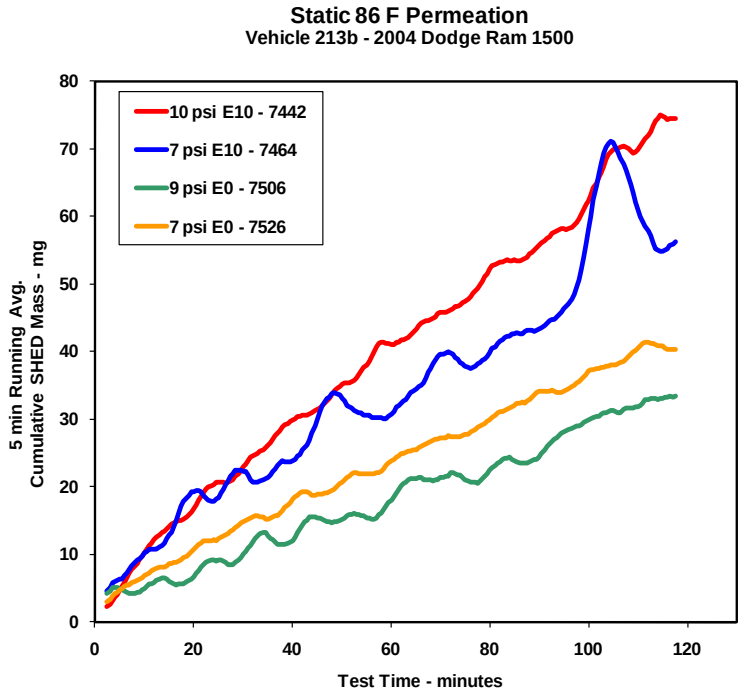


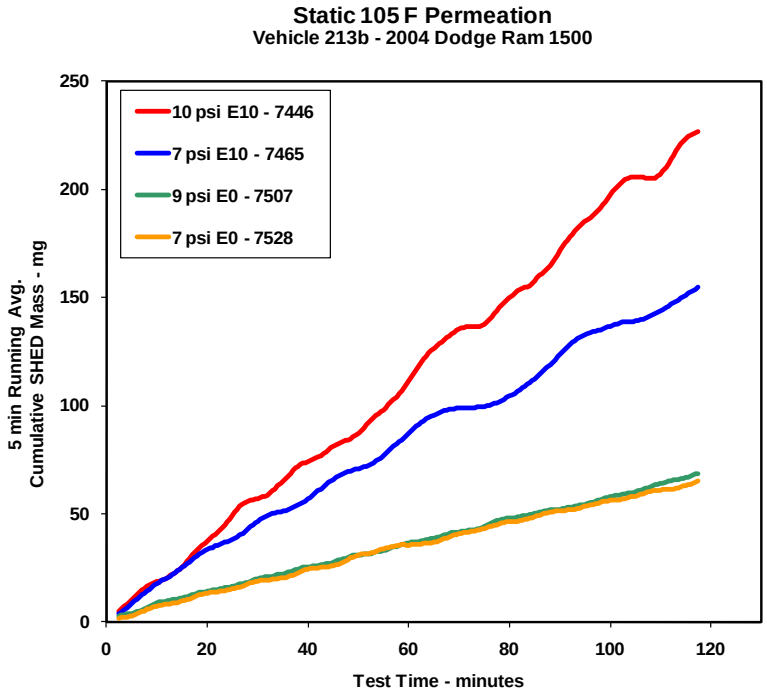
Vehicle 213b – 2004 Dodge Ram 1500

Veh	Fuel psi/EtOH	Test	Type	Date	Test#	Corrected Permeation mg/hr	SHED Results mg/day (Corrected)	Canister Loss g
213b	10.0/E10	Static (86)	Perm	01/14/09	7442	39.2		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	01/15/09	7446	106.8		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Dynamic	RL	01/26/09	25750	130.9		0.00
			TEFVO			0.9		0.00
		72 DHB	65-105	01/06/09	7429			
		Day 1					650.6	0.00
		Day 2					615.4	0.00
		Day 3					700.7	1.60
	7.0/E10	Static (86)	Perm	02/11/09	7464	29.6		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	02/12/09	7465	82.2		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Dynamic	RL	02/13/09	25754	243.1		0.00
			TEFVO			60.5		0.00
		72 DHB	65-105	02/25/09	7473			
		Day 1					602.8	0.00
		Day 2					577.7	0.00
		Day 3					588.9	0.00
	9.0/E0	Static (86)	Perm	04/07/09	7506	14.7		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	04/08/09	7507	34.5		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Dynamic	RL	04/09/09	25764	203.1		0.61
			TEFVO			14.5		0.00
		72 DHB	65-105	04/14/09	7516			
		Day 1					346.3	0.00
		Day 2					328.4	0.00
		Day 3					292.8	0.00

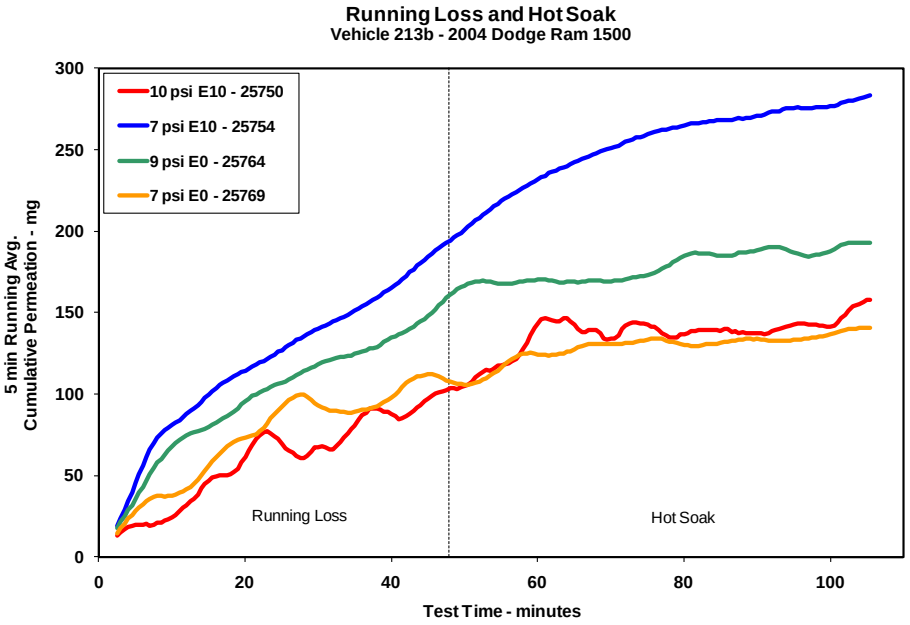
7.0/E0	Static (86)	Perm	04/23/09	7526	21.1		0.00
		Press. Incr.			0.0		
		Prs+Fuel Incr.			0.0		
	Static (105)	Perm	04/24/09	7528	35.3		0.00
		Press. Incr.			0.0		
		Prs+Fuel Incr.			0.0		
	Dynamic	RL	04/27/09	25769	135.1		0.00
		TEVFO			12.2		0.00
	72 DHB	65-105	05/05/09	7538			
	Day 1					357.8	0.00
	Day 2					283.3	0.00
	Day 3					276.5	0.00

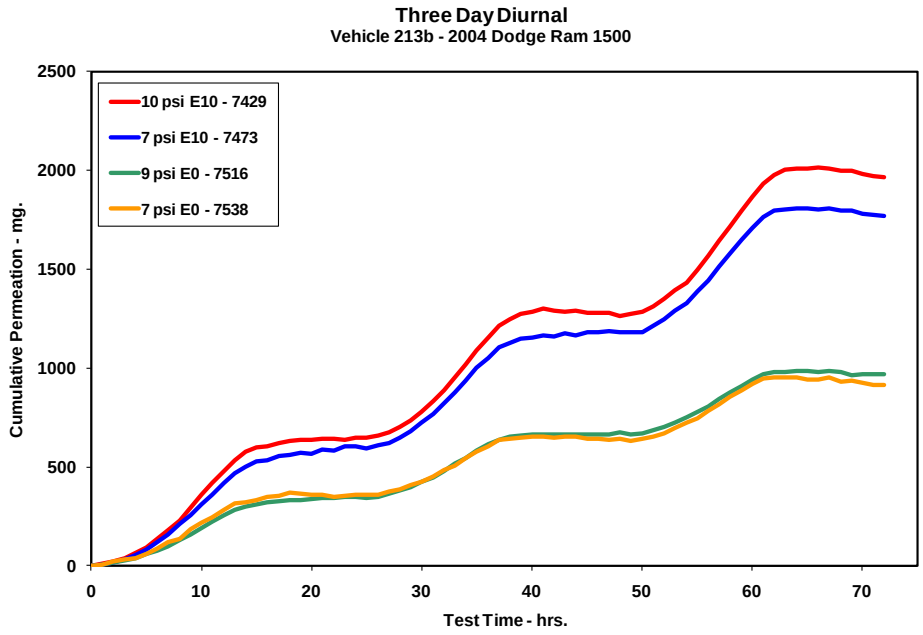
Vehicle 213b – 2004 Dodge Ram 1500





Vehicle 213b – 2004 Dodge Ram 1500 (cont.)



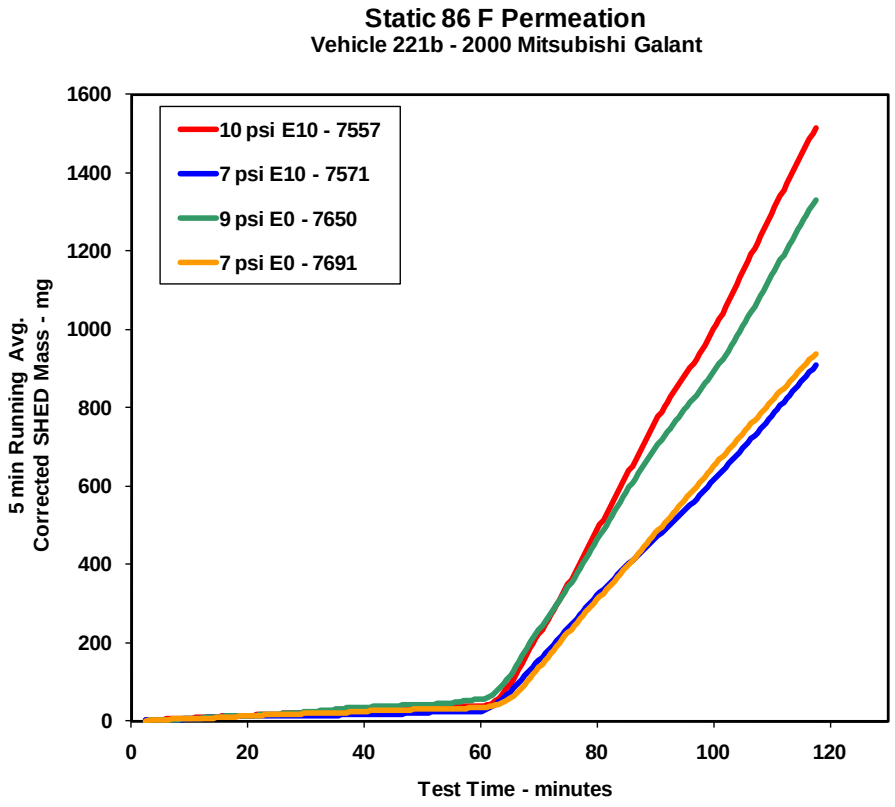


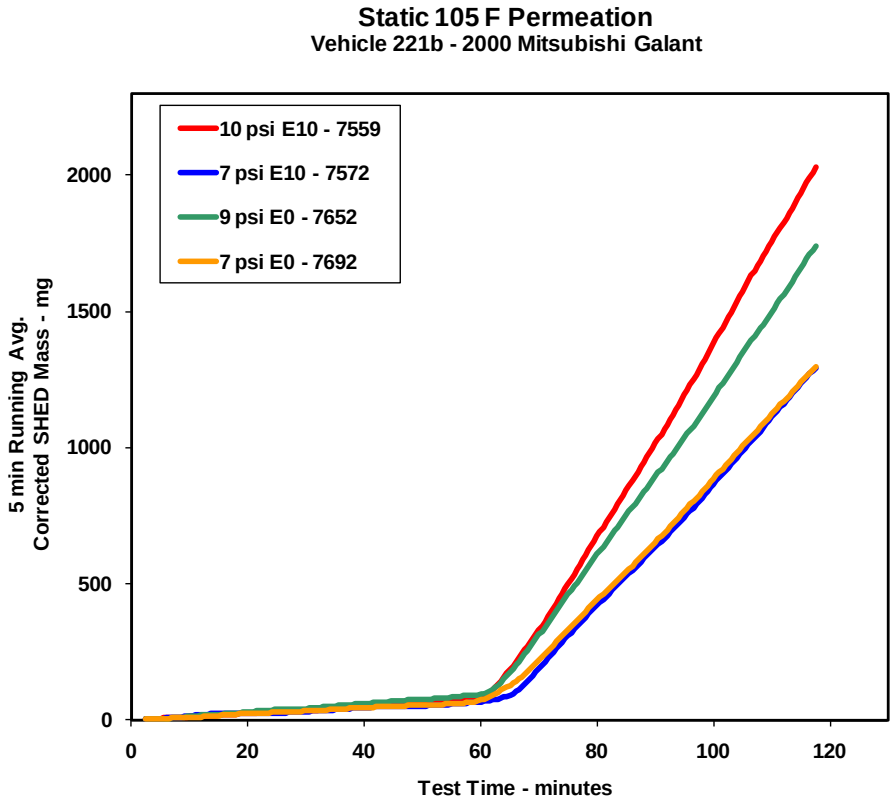
Vehicle 221b - 2000 Mitsubishi Galant

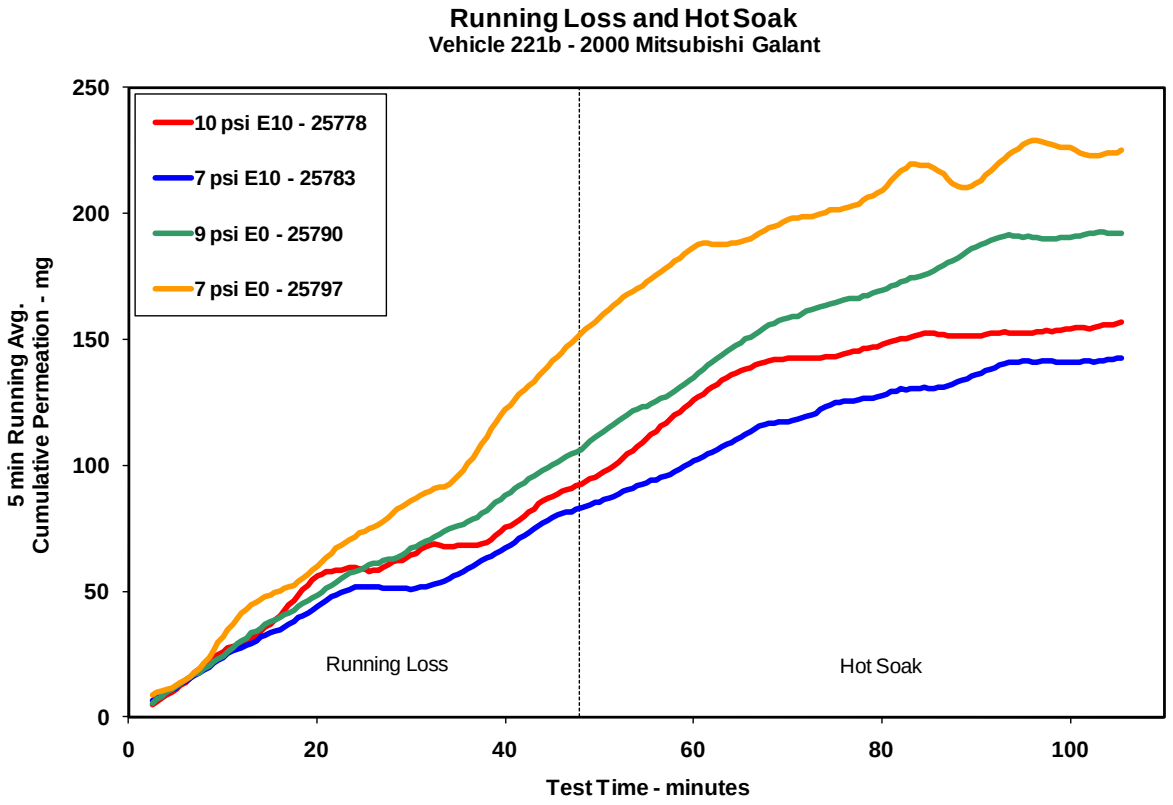
2000 Mitsubishi Galant

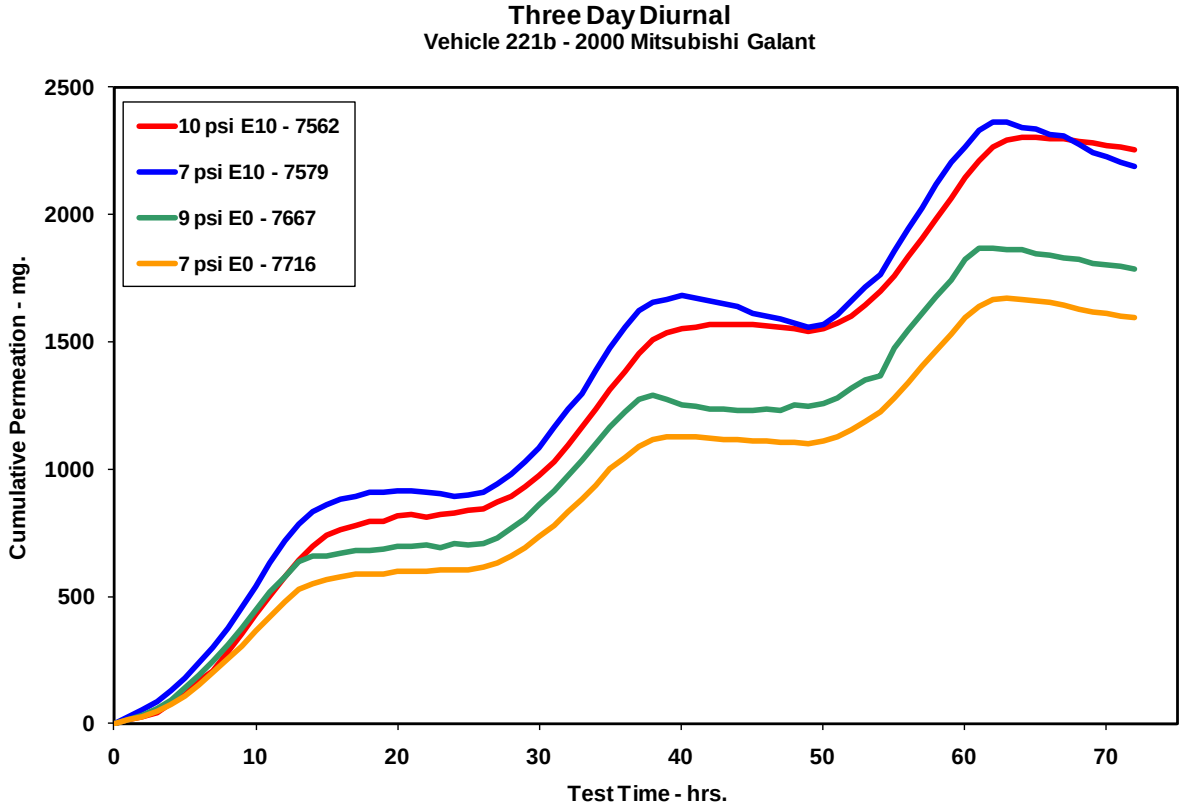
Veh	Fuel psi/EtOH	Test	Type	Date	Test#	Corrected Permeation mg/hr	SHED Results mg/day (Corrected)	Canister Loss g
221b	10.0/E10	Static (86)	Perm	05/27/09	7557	38.9		0.00
			Press. Incr.			1568.7		
			Prs+Fuel Incr.			1693.9		
		Static (105)	Perm	05/28/09	7559	80.2		0.00
			Press. Incr.			1932.6		
			Prs+Fuel Incr.			2147.1		
			"True" HS			26.9		0.00
		72 DHB	65-105	06/02/09	7562			
		Day 1					827.9	2.00
		Day 2					724.1	5.40
		Day 3					702.4	21.80
	7.0/E10	Static (86)	Perm	06/10/09	7571	22.7		0.00
			Press. Incr.			930.7		
			Prs+Fuel Incr.			971.0		
		Static (105)	Perm	06/11/09	7572	61.4		0.00
			Press. Incr.			1282.3		
			Prs+Fuel Incr.			1408.5		
		Dynamic	RL	06/12/09	25783	102.0		0.00
			"True" HS			40.5		0.00
		Day 1					894.7	0.00
		Day 2					676.7	0.00
		Day 3					618.0	0.00
	9.0/E0	Static (86)	Perm	08/20/09	7650	55.6		0.00
			Prs+Fuel Incr.			1406.0		
		Static (105)	Perm	08/21/09	7652	94.8		0.00
			Press. Incr.			1646.7		
			Prs+Fuel Incr.			1788.2		
		Dynamic	RL	08/24/09	25790	135.2		0.00
			"True" HS			29.0		0.00
		72 DHB	65-105	09/01/09	7667			
		Day 1					706.4	0.30
		Day 2					543.7	2.60
		Day 3					538.3	9.30

7.0/E0	Static (86)	Perm	09/17/09	7691	35.9		0.00
		Press. Incr.			988.8		
		Prs+Fuel Incr.			961.8		
	Static (105)	Perm	09/18/09	7692	66.8		0.00
		Press. Incr.			1215.9		
		Prs+Fuel Incr.			1343.8		
	Dynamic	RL	09/22/09	25797	189.8		0.00
		"True" HS			42.5		0.00
	72 DHB	65-105	10/07/09	7716			
	Day 1					603.0	0.00
	Day 2					503.1	0.00
	Day 3					487.0	0.00


Static 86 F Permeation
Vehicle 221b - 2000 Mitsubishi Galant
10 psi E10 - 7557
7 psi E10 - 7571
9 psi E0 - 7650
7 psi E0 - 7691
5 min Running Avg.
Corrected SHED Mass - mg
1600
1400
1200
1000
800
600
400
200
0
0
20
40
60
80
100
120
Test Time - minutes


Static 105 F Permeation
Vehicle 221b - 2000 Mitsubishi Galant
10 psi E10 - 7559
7 psi E10 - 7572
9 psi E0 - 7652
7 psi E0 - 7692
5 min Running Avg.
Corrected SHED Mass - mg
2000
1500
1000
500
0
0
20
40
60
80
100
120
Test Time - minutes


Running Loss and Hot Soak
Vehicle 221b - 2000 Mitsubishi Galant
10 psi E10 - 25778
7 psi E10 - 25783
9 psi E0 - 25790
7 psi E0 - 25797
5 min Running Avg.
Cumulative Permeation - mg
Running Loss
Hot Soak
Test Time - minutes
0
50
100
150
200
250
0
20
40
60
80
100

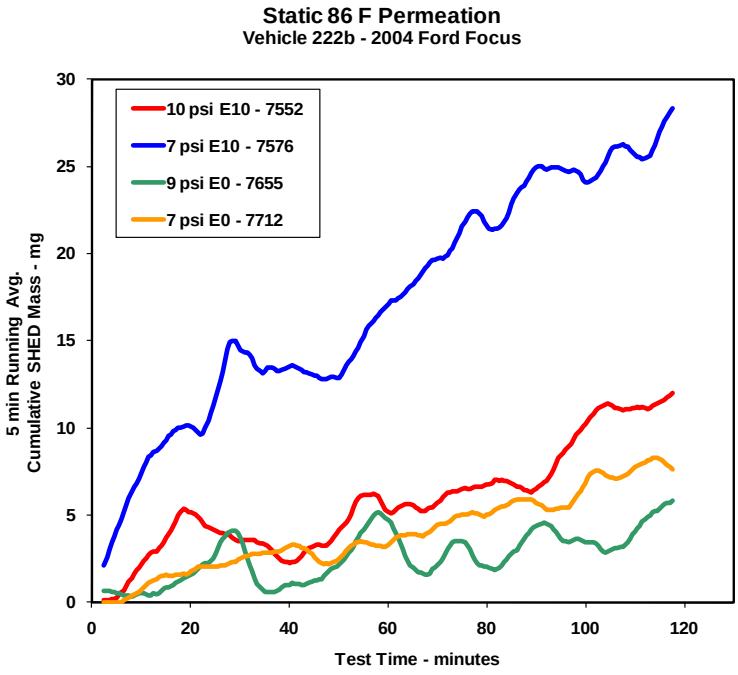

Three Day Diurnal
Vehicle 221b - 2000 Mitsubishi Galant
10 psi E10 - 7562
7 psi E10 - 7579
9 psi E0 - 7667
7 psi E0 - 7716
Cumulative Permeation - mg.
Test Time - hrs.
0
500
1000
1500
2000
2500
0
10
20
30
40
50
60
70

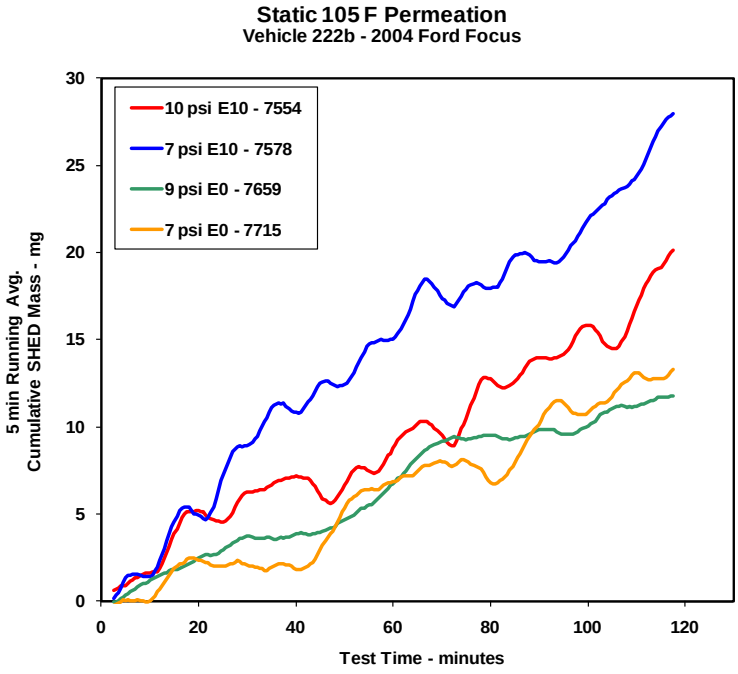
Vehicle 222b – 2004 Ford Focus

Veh	Fuel psi/EtOH	Test	Type	Date	Test#	Corrected Permeation mg/hr	SHED Results mg/day (Corrected)	Canister Loss g
222b	10.0/E10	Static (86)	Perm	05/20/09	7552	3.7		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	05/21/09	7554	7.4		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			8.3		
		Dynamic	RL	06/03/09	25779	73.1		0.00
			TEFVO			0.0		0.00
		72 DHB	65-105	05/27/09	7558			
		Day 1					104.1	1.70
		Day 2					79.7	16.00
		Day 3					73.4	30.20
	7.0/E10	Static (86)	Perm	06/17/09	7576	12.1		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Static (105)	Perm	06/18/09	7578	16.3		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.0		
		Dynamic	RL	07/01/09	25785	61.7		0.00
			TEFVO			0.0		0.00
		72 DHB	65-105	06/23/09	7580			
		Day 1					99.6	0.00
		Day 2					104.0	0.00
		Day 3					84.0	0.00
	9.0/E0	Static (86)	Perm	08/25/09	7655	3.1		0.00
			Press. Incr.			0.5		
			Prs+Fuel Incr.			4.0		
		Static (105)	Perm	08/26/09	7659	5.8		0.00
			Press. Incr.			0.0		
			Prs+Fuel Incr.			0.5		
		Dynamic	RL	08/27/09	25791	45.5		0.00
			"True" HS			0.0		0.00
		72 DHB	65-105	09/22/09	7696			
		Day 1					77.4	0.00
		Day 2					41.9	0.00
		Day 3					57.9	0.00

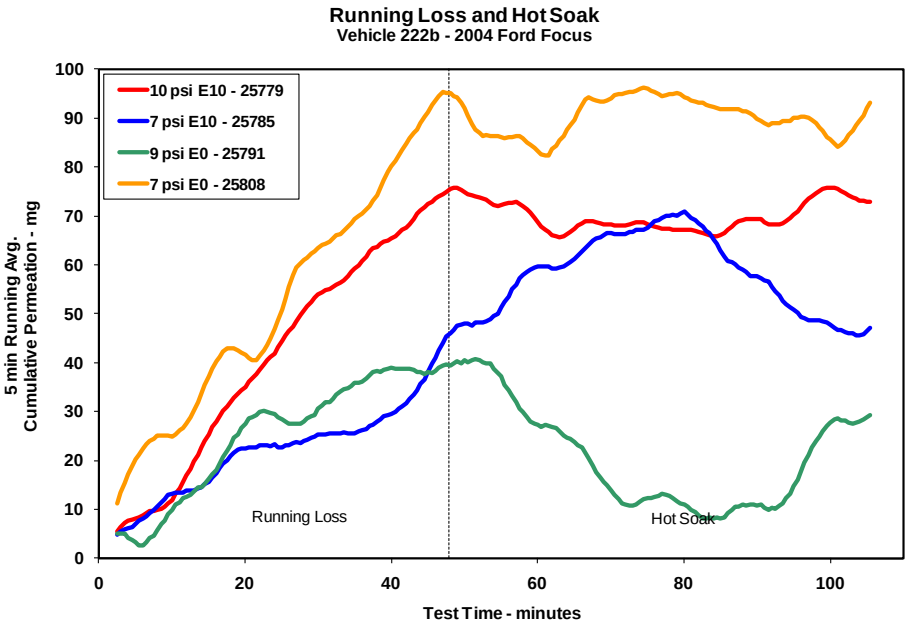
7.0/E0	Static (86)	Perm	10/06/09	7712	3.4		0.60
		Press. Incr.			0.0		
		Prs+Fuel Incr.			0.0		
	Static (105)	Perm	10/07/09	7715	6.4		0.00
		Press. Incr.			0.0		
		Prs+Fuel Incr.			0.0		
	Dynamic	RL	10/23/09	25808	128.8		0.00
		"True" HS			5.4		0.00
	72 DHB	65-105	10/27/09	7742			
	Day 1					58.6	0.00
	Day 2					39.0	0.00
	Day 3					38.8	0.00

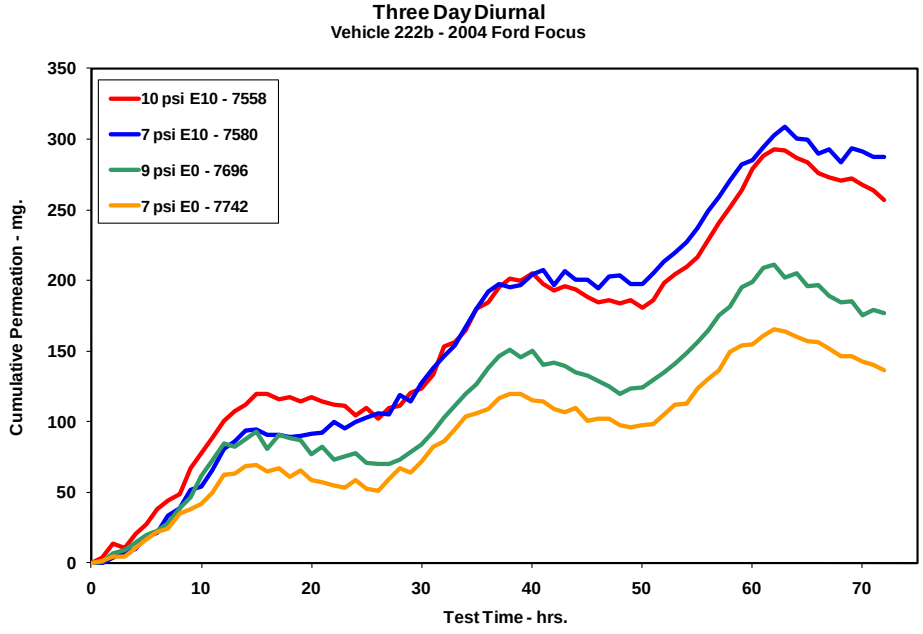
Vehicle 222b – 2004 Ford Focus





Vehicle 222b – 2004 Ford Focus (cont.)





APPENDIX E

COMPLETE SPECIATION TEST RESULTS – ALL E-77-2b VEHICLES

Vehicle 206b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7456	247.0	100.8	249.1	885.1	3.553	71
Static	E10 - 7 psi	7484	279.7	79.6	222.7	796.1	3.575	60
	E0 - 9 psi	7539	123.3	99.5	122.8	511.2	4.164	55
	E0 - 7 psi	7561	97.3	80.1	78.0	284.8	3.651	56
105° F	E10 - 10 psi	7459	630.7	93.1	587.4	2085.4	3.550	86
Static	E10 - 7 psi	7487	606.2	125.3	759.4	2686.3	3.538	84
	E0 - 9 psi	7545	366.7	72.9	267.3	814.4	3.047	30
	E0 - 7 psi	7563	234.6	85.9	201.5	854.3	4.241	30
Dynamic	E10 - 10 psi	25753	727.2	87.3	634.7	2191.6	3.453	66
	E10 - 7 psi	25760	673.6	90.0	606.0	2158.5	3.562	59
	E0 - 9 psi	25775	456.1	76.8	350.1	1316.4	3.760	54
	E0 - 7 psi	25780	316.9	78.8	249.7	987.9	3.956	52
DHB	E10 - 10 psi	7476	76809.3	82.4	63303.9	148993.1	2.354	123
Total	E10 - 7 psi	7495	6985.0	88.6	6189.7	21304.5	3.442	108
	E0 - 9 psi	7551	4036.4	91.1	3677.3	11381.0	3.095	107
	E0 - 7 psi	7567	2993.3	93.4	2797.0	8687.2	3.106	105

Vehicle 206b - Fuel 10 psi E10 - 86°F Static - Test 7456					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	48.01	188.431	
n-Butane	00106-97-8	1.08	28.79	31.008	
Ethanol	00064-17-5	1.45	27.48	39.815	
2-Methylbutane (Isopentane)	00078-78-4	1.35	16.98	23.013	
n-Hexane	00110-54-3	1.13	11.59	13.154	
Benzene	00071-43-2	0.69	8.67	6.020	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	6.40	49.622	
2-Methyl-2-butene	00513-35-9	14.20	5.73	81.281	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	5.55	29.779	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	5.53	7.729	
t-2-Pentene	00646-04-8	10.47	5.38	56.317	
n-Pentane	00109-66-0	1.21	5.20	6.318	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	4.59	33.912	
3-Methylpentane	00096-14-0	1.69	3.73	6.304	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	3.47	4.157	
Methylcyclopentane	00096-37-7	2.05	2.99	6.132	
c-2-Pentene	00627-20-3	10.28	2.89	29.663	
Cyclohexane	00110-82-7	1.14	2.55	2.901	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.45	10.769	
2,3-Dimethylbutane	00079-29-8	0.90	2.40	2.158	
2-Methyl-1-butene	00563-46-2	6.38	2.26	14.412	
n-Heptane	00142-82-5	0.97	2.05	1.976	
Methylcyclohexane	00108-87-2	1.56	2.03	3.158	
ortho-Xylene	00095-47-6	7.58	1.74	13.178	
2-Methylpropane	00075-28-5	1.18	1.65	1.944	
2,3-Dimethylpentane	00565-59-3	1.25	1.49	1.865	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.49	1.414	
t-2-Hexene	04050-45-7	8.55	1.46	12.466	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.42	16.728	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	1.42	16.626	
1-Methylcyclopentene	00693-89-0	12.45	1.40	17.471	
2,4-Dimethylpentane	00108-08-7	1.46	1.35	1.964	
c-2-Butene	00590-18-1	14.26	1.31	18.701	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.30	7.178	
2-Methylhexane	00591-76-4	1.09	1.26	1.365	
2-Methylheptane	00592-27-8	0.97	1.19	1.148	
t-2-Butene	00624-64-6	15.20	1.13	17.156	
n-Octane	00111-65-9	0.80	1.11	0.887	
Ethylbenzene	00100-41-4	2.96	1.11	3.279	
Cyclopentene	00142-29-0	6.69	1.08	7.194	
3-Methyl-t-2-pentene	00616-12-6	11.66	1.03	11.983	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.99	3.172	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.95	6.256	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.89	7.065	

Vehicle 206b - Fuel 10 psi E10 - 86°F Static - Test 7456 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Indan	00496-11-7	3.23	0.87	2.825	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.84	10.507	
2,4-Dimethylhexane	00589-43-5	1.61	0.84	1.341	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.80	4.248	
2-Methyl-2-pentene	00625-27-4	11.03	0.77	8.489	
Unknown #22	.	3.55	0.75	2.668	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.75	0.786	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.71	8.495	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.70	1.117	
3-Methylheptane	00589-81-1	1.12	0.67	0.759	
t-1,2-Dimethylcyclopentane	00822-50-4	3.55	0.67	2.393	
1,4-Diethylbenzene	00105-05-5	4.39	0.67	2.943	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.65	5.111	
c-1,3-Dimethylcyclohexane	00638-04-0	3.55	0.65	2.316	
2,2-DiMeHexane	00590-73-8	0.94	0.63	0.595	
n-Nonane	00111-84-2	0.68	0.60	0.409	
c-1,3-Dimethylcyclopentane	02532-58-3	3.55	0.55	1.950	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	0.49	2.816	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.44	0.497	
n-Decane	00124-18-5	0.59	0.43	0.256	
2,2-Dimethylpentane	00590-35-2	1.04	0.41	0.424	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.40	2.857	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.37	0.405	
2,2-Dimethylbutane	00075-83-2	1.11	0.34	0.378	
Isopropylbenzene (Cumene)	00098-82-8	3.55	0.25	0.883	
Unknown #1		3.55	0.20	0.728	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.18	1.861	
		Total	249.1	885.1	3.553
No MIR available, use weighted average of 3.5531					

Vehicle 206b - Fuel 10 psi E10 - 105°F Static - Test 7459

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	109.41	429.434	
Ethanol	00064-17-5	1.45	79.67	115.437	
n-Butane	00106-97-8	1.08	60.47	65.121	
2-Methylbutane (Isopentane)	00078-78-4	1.35	38.51	52.170	
n-Hexane	00110-54-3	1.13	25.70	29.162	
Benzene	00071-43-2	0.69	18.23	12.655	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	16.75	129.906	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	14.86	79.761	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	13.07	18.270	
2-Methyl-2-butene	00513-35-9	14.20	12.49	177.237	
t-2-Pentene	00646-04-8	10.47	11.85	124.115	
n-Pentane	00109-66-0	1.21	11.80	14.341	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	10.54	77.838	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	8.58	10.285	
3-Methylpentane	00096-14-0	1.69	8.57	14.486	
Methylcyclopentane	00096-37-7	2.05	7.71	15.795	
Cyclohexane	00110-82-7	1.14	6.66	7.578	
2,3-Dimethylbutane	00079-29-8	0.90	5.96	5.355	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	5.80	25.486	
c-2-Pentene	00627-20-3	10.28	5.69	58.531	
2-Methyl-1-butene	00563-46-2	6.38	5.09	32.497	
n-Propylbenzene	00103-65-1	1.96	4.72	9.255	
ortho-Xylene	00095-47-6	7.58	4.50	34.080	
1,3,5-Trimethylbenzene	00108-67-8	11.75	4.25	49.981	
2,3,4-Trimethylpentane	00565-75-3	0.95	4.19	3.978	
t-2-Butene	00624-64-6	15.20	4.15	63.096	
n-Heptane	00142-82-5	0.97	4.01	3.876	
2,3-Dimethylpentane	00565-59-3	1.25	3.98	4.972	
Methylcyclohexane	00108-87-2	1.56	3.95	6.147	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	3.62	42.314	
2-Methylhexane	00591-76-4	1.09	3.59	3.897	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	3.40	18.850	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	3.37	10.766	
2,4-Dimethylpentane	00108-08-7	1.46	3.25	4.738	
t-2-Hexene	04050-45-7	8.55	3.22	27.547	
1-Methylcyclopentene	00693-89-0	12.45	2.97	37.042	
2-Methylpropane	00075-28-5	1.18	2.90	3.408	
Ethylbenzene	00100-41-4	2.96	2.70	8.013	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	2.46	13.032	
c-2-Butene	00590-18-1	14.26	2.43	34.700	
Cyclopentene	00142-29-0	6.69	2.41	16.094	
n-Octane	00111-65-9	0.80	2.22	1.771	
3-Methyl-t-2-pentene	00616-12-6	11.66	2.22	25.834	
2,4-Dimethylhexane	00589-43-5	1.61	2.02	3.242	

Vehicle 206b - Fuel 10 psi E10 - 105°F Static - Test 7459 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
3-Methyl-c-2-pentene	00922-62-3	12.52	1.96	24.488	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.90	22.685	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	1.71	11.279	
2-Methyl-2-pentene	00625-27-4	11.03	1.64	18.090	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	1.47	2.354	
1,4-Diethylbenzene	00105-05-5	4.39	1.35	5.927	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.30	10.350	
n-Decane	00124-18-5	0.59	1.30	0.768	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.20	1.315	
2,2-DiMeHexane	00590-73-8	0.94	1.19	1.118	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	1.14	8.556	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.07	1.200	
3-Methylheptane	00589-81-1	1.12	1.06	1.195	
Indan	00496-11-7	3.23	1.02	3.303	
Unknown #22	.	3.55	0.91	3.248	
2-Methylheptane	00592-27-8	0.97	0.86	0.834	
t-1,2-Dimethylcyclopentane	00822-50-4	3.55	0.85	3.026	
n-Nonane	00111-84-2	0.68	0.81	0.553	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.74	5.261	
Ethylcyclohexane	01678-91-7	1.35	0.72	0.975	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.69	0.729	
4-Methyloctane	02216-34-4	0.85	0.67	0.571	
Isopropylbenzene (Cumene)	00098-82-8	3.55	0.66	2.350	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.61	2.367	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.57	4.492	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	0.53	3.086	
3,3-Dimethylpentane	00562-49-2	1.12	0.52	0.587	
Unknown #5		3.55	0.47	1.684	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	0.45	0.532	
t-1,4-Dimethylcyclohexane	02207-04-7	3.55	0.43	1.513	
c-1,3-Dimethylcyclopentane	02532-58-3	3.55	0.42	1.492	
2,2-Dimethylbutane	00075-83-2	1.11	0.38	0.419	
c-2-Heptene	06443-92-1	7.08	0.37	2.621	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	0.35	2.629	
1,3-Diethylbenzene	00141-93-5	7.08	0.33	2.338	
c-1,3-Dimethylcyclohexane	00638-04-0	3.55	0.33	1.154	
1,3-Dimethyl-4-Ethylbenzene	00874-41-9	7.54	0.30	2.294	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.30	3.100	
Styrene	00100-42-5	1.66	0.24	0.406	
2,2-Dimethylpentane	00590-35-2	1.04	0.22	0.226	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	3.55	0.21	0.738	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.18	1.487	
		Total	587.4	2085.4	3.550
No MIR available, use weighted average of 3.5503					

Vehicle 206b - Fuel 10 psi E10 - Dynamic - Test 25753					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	117.87	462.653	
Ethanol	00064-17-5	1.45	77.41	112.160	
n-Butane	00106-97-8	1.08	49.17	52.950	
2-Methylbutane (Isopentane)	00078-78-4	1.35	26.52	35.927	
n-Hexane	00110-54-3	1.13	24.76	28.090	
Benzene	00071-43-2	0.69	22.18	15.398	
n-Propylbenzene	00103-65-1	1.96	20.00	39.201	
Unknown #22	.	3.45	17.66	60.998	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	17.56	94.271	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	17.10	132.635	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	12.68	93.657	
2-Methyl-2-butene	00513-35-9	14.20	12.20	173.135	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	12.09	14.503	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	12.00	16.775	
n-Pentane	00109-66-0	1.21	9.49	11.533	
t-2-Pentene	00646-04-8	10.47	8.90	93.256	
3-Methylpentane	00096-14-0	1.69	8.83	14.937	
Methylcyclopentane	00096-37-7	2.05	8.46	17.345	
Cyclohexane	00110-82-7	1.14	7.60	8.643	
1,3,5-Trimethylbenzene	00108-67-8	11.75	7.59	89.211	
2-Methylpropane	00075-28-5	1.18	6.46	7.604	
2,3-Dimethylbutane	00079-29-8	0.90	6.33	5.693	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	6.11	26.866	
2,3,4-Trimethylpentane	00565-75-3	0.95	5.96	5.657	
2,3-Dimethylpentane	00565-59-3	1.25	5.65	7.054	
ortho-Xylene	00095-47-6	7.58	5.23	39.602	
c-2-Pentene	00627-20-3	10.28	5.20	53.457	
Methylcyclohexane	00108-87-2	1.56	5.15	8.003	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	5.07	16.180	
n-Heptane	00142-82-5	0.97	5.00	4.828	
2-Methylhexane	00591-76-4	1.09	4.75	5.153	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	4.59	25.446	
n-Octane	00111-65-9	0.80	4.51	3.591	
2-Methyl-1-butene	00563-46-2	6.38	4.51	28.743	
Cyclopentene	00142-29-0	6.69	3.91	26.172	
2,4-Dimethylpentane	00108-08-7	1.46	3.80	5.550	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	3.29	12.566	
2,4-Dimethylhexane	00589-43-5	1.61	3.27	5.247	
2,2-DiMeHexane	00590-73-8	0.94	3.23	3.036	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	3.10	24.626	
Ethylbenzene	00100-41-4	2.96	2.96	8.781	
3-Methyl-t-2-pentene	00616-12-6	11.66	2.84	33.133	
3-Methyl-c-2-pentene	00922-62-3	12.52	2.78	34.781	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	2.78	32.521	

Vehicle 206b - Fuel 10 psi E10 - Dynamic - Test 25753 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	2.73	2.979	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	2.61	17.244	
2,2,5-Trimethylhexane	03522-94-9	1.05	2.52	2.659	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	2.46	13.049	
t-2-Hexene	04050-45-7	8.55	2.40	20.514	
t-2-Butene	00624-64-6	15.20	2.38	36.190	
2-Methyl-2-pentene	00625-27-4	11.03	2.36	26.010	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	2.30	16.259	
c-2-Butene	00590-18-1	14.26	1.82	25.931	
n-Nonane	00111-84-2	0.68	1.80	1.230	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	1.76	2.825	
c-1,3-Dimethylcyclopentane	02532-58-3	3.45	1.75	6.033	
2-Methylheptane	00592-27-8	0.97	1.65	1.596	
t-1,2-Dimethylcyclopentane	00822-50-4	3.45	1.58	5.472	
3-Methylheptane	00589-81-1	1.12	1.58	1.781	
2,2-Dimethylbutane	00075-83-2	1.11	1.51	1.676	
Indan	00496-11-7	3.23	1.36	4.390	
c-1,3-Dimethylcyclohexane	00638-04-0	3.45	0.82	2.836	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.80	6.011	
Isopropylbenzene (Cumene)	00098-82-8	3.45	0.78	2.702	
Ethylcyclohexane	01678-91-7	1.35	0.61	0.814	
t-1,4-Dimethylcyclohexane	02207-04-7	3.45	0.52	1.791	
		Total	634.7	2191.6	3.453
No MIR available, use weighted average of 3.4531					

Vehicle 206b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7476

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	22238.67	23949.113	
2-Methylbutane (Isopentane)	00078-78-4	1.35	14866.21	20142.039	
2-Methylpropane	00075-28-5	1.18	3913.84	4605.038	
Ethanol	00064-17-5	1.45	2333.12	3380.625	
n-Pentane	00109-66-0	1.21	1930.18	2345.041	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1422.57	1988.449	
Toluene	00108-88-3	3.93	1379.64	5415.108	
n-Hexane	00110-54-3	1.13	1341.84	1522.557	
2-Methyl-2-butene	00513-35-9	14.20	1323.52	18787.299	
t-2-Pentene	00646-04-8	10.47	1248.37	13074.803	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1137.90	1364.475	
2-Methyl-1-butene	00563-46-2	6.38	922.81	5886.165	
3-Methylpentane	00096-14-0	1.69	844.25	1427.512	
c-2-Butene	00590-18-1	14.26	834.12	11894.362	
2,3-Dimethylbutane	00079-29-8	0.90	705.81	634.310	
c-2-Pentene	00627-20-3	10.28	644.03	6621.505	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	585.08	6848.147	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	570.01	4526.514	
2,3-Dimethylpentane	00565-59-3	1.25	429.33	535.941	
Methylcyclopentane	00096-37-7	2.05	339.04	694.969	
2,4-Dimethylpentane	00108-08-7	1.46	336.49	491.047	
Benzene	00071-43-2	0.69	335.00	232.607	
2,3,4-Trimethylpentane	00565-75-3	0.95	287.60	272.885	
Propane	00074-98-6	0.46	266.68	121.904	
Cyclohexane	00110-82-7	1.14	237.51	270.139	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	219.54	700.548	
2-Methylhexane	00591-76-4	1.09	216.38	234.811	
n-Heptane	00142-82-5	0.97	193.59	186.959	
2,4-Dimethylhexane	00589-43-5	1.61	136.50	219.158	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	131.06	694.428	
Methylcyclohexane	00108-87-2	1.56	127.17	197.793	
Cyclopentene	00142-29-0	6.69	125.09	836.329	
t-2-Hexene	04050-45-7	8.55	123.48	1055.588	
2,2-Dimethylbutane	00075-83-2	1.11	111.28	123.658	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	98.95	158.848	
3-Methyl-t-2-pentene	00616-12-6	11.66	93.97	1095.679	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	93.85	727.823	
2-Methyl-2-pentene	00625-27-4	11.03	78.27	863.564	
3-Methyl-c-2-pentene	00922-62-3	12.52	75.32	942.829	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	70.98	410.108	
2,2,5-Trimethylhexane	03522-94-9	1.05	70.44	74.173	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	66.30	438.014	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	63.49	69.333	
1-Methylcyclopentene	00693-89-0	12.45	56.66	705.719	

Vehicle 206b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7476 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,2,3-Trimethylbutane	00464-06-2	1.05	19.23	20.263	
Ethylbenzene	00100-41-4	2.96	18.93	56.077	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	17.25	75.806	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	13.57	52.421	
c-1,3-Dimethylcyclohexane	00638-04-0	2.35	13.53	31.844	
Ethane	00074-84-0	0.26	13.03	3.424	
2-Methyl-1,3-butadiene	00078-79-5	10.48	12.67	132.793	
3,5-Dimethylheptane	00926-82-9	1.42	12.58	17.904	
Unknown #5		2.35	12.10	28.475	
1,3,5-Trimethylbenzene	00108-67-8	11.75	12.05	141.695	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	11.81	92.502	
3,3-Dimethylhexane	00563-16-6	1.15	9.90	11.401	
2,2-DiMeHexane	00590-73-8	0.94	9.62	9.051	
n-Propylbenzene	00103-65-1	1.96	9.45	18.519	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	9.16	50.746	
2,3,5-Trimethylhexane	01069-53-0	1.12	8.71	9.758	
4-Methyloctane	02216-34-4	0.85	8.01	6.791	
t-1,4-Dimethylcyclohexane	02207-04-7	2.35	5.76	13.550	
Unknown #8		2.35	5.75	13.537	
c-2-Heptene	06443-92-1	7.08	5.66	40.019	
3-Methyloctane	02216-33-3	0.88	5.08	4.493	
1,3-Butadiene	00106-99-0	12.45	5.07	63.201	
n-Nonane	00111-84-2	0.68	4.89	3.337	
t-3-Heptene	14686-14-7	6.17	4.65	28.721	
Unknown #13		2.35	4.28	10.072	
1-Nonene	00124-11-8	2.49	4.09	10.201	
2,4-Dimethylheptane	02213-23-2	1.26	3.95	4.993	
1,2,3-Trimethylbenzene	00526-73-8	11.94	3.93	46.913	
Ethylene	00074-85-1	8.88	3.78	33.601	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	3.70	3.163	
Isopropylbenzene (Cumene)	00098-82-8	2.35	3.64	8.578	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	3.59	22.613	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	3.57	23.383	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.35	3.56	8.390	
t-4-Octene	14850-23-8	4.69	3.28	15.386	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	3.23	27.020	
1-Heptene	00592-76-7	4.29	2.76	11.818	
1-Butyne	00107-00-6	6.05	2.49	15.065	
Indan	00496-11-7	3.23	2.25	7.265	
Unknown #16		2.35	2.23	5.250	
Unknown #3		2.35	2.21	5.197	

Vehicle 206b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7476 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1,1-Dimethylcyclohexane	00590-66-9	1.12	2.10	2.337	
Unknown #9		2.35	2.05	4.819	
t-2-Nonene	06434-78-2	2.35	1.71	4.031	
c-2-Octene	07642-04-8	2.35	1.67	3.936	
Unknown #6	.	2.35	1.53	3.608	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	1.46	14.297	
1,4-Diethylbenzene	00105-05-5	4.39	1.34	5.879	
2,2-Dimethyloctane	15869-87-1	0.76	1.34	1.011	
Unknown #10		2.35	1.16	2.725	
n-Decane	00124-18-5	0.59	1.16	0.683	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	1.15	1.356	
Unknown #7		2.35	1.11	2.612	
c- & t-4-Nonene	02198-23-4	4.42	0.88	3.897	
t-2-Octene & t-1,2-DiMeCyHexane	13389-42-9+06876-23-9	7.43	0.77	5.695	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.69	4.872	
c-1,2-Dimethylcyclohexane	02207-01-4	2.35	0.65	1.527	
Unknown #11		2.35	0.59	1.388	
sec-Butylbenzene	00135-98-8	2.29	0.59	1.345	
1,3-Diethylbenzene	00141-93-5	7.08	0.59	4.158	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	0.59	4.424	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.58	4.700	
Isobutylbenzene	00538-93-2	2.35	0.48	1.131	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.45	1.729	
Styrene	00100-42-5	1.66	0.44	0.739	
1,2,3,5-Tetramethylbenzene	00527-53-7	9.26	0.32	2.954	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.29	2.212	
Unknown #14		2.35	0.24	0.570	
Unknown #4		2.35	0.20	0.469	
		Total	63303.9	148993.1	2.354
No MIR available, use weighted average	of 2.3536				

Vehicle 206b - Fuel 7 psi E10 - 86°F Static - Test 7484

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	47.17	185.157	
Ethanol	00064-17-5	1.45	29.29	42.448	
n-Butane	00106-97-8	1.08	18.20	19.599	
2-Methylbutane (Isopentane)	00078-78-4	1.35	13.25	17.958	
n-Hexane	00110-54-3	1.13	10.81	12.261	
Benzene	00071-43-2	0.69	8.83	6.131	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	7.10	38.104	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	7.01	54.340	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	5.15	38.067	
2-Methyl-2-butene	00513-35-9	14.20	5.01	71.131	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	4.98	6.966	
t-2-Pentene	00646-04-8	10.47	4.96	51.966	
n-Pentane	00109-66-0	1.21	3.94	4.790	
3-Methylpentane	00096-14-0	1.69	3.27	5.526	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	3.02	3.620	
Methylcyclopentane	00096-37-7	2.05	3.01	6.163	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.76	12.130	
Cyclohexane	00110-82-7	1.14	2.69	3.056	
c-2-Pentene	00627-20-3	10.28	2.19	22.522	
2,3-Dimethylbutane	00079-29-8	0.90	2.17	1.953	
n-Heptane	00142-82-5	0.97	1.99	1.923	
2-Methyl-1-butene	00563-46-2	6.38	1.89	12.052	
ortho-Xylene	00095-47-6	7.58	1.87	14.160	
Methylcyclohexane	00108-87-2	1.56	1.65	2.565	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.65	9.132	
t-2-Hexene	04050-45-7	8.55	1.53	13.101	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.44	16.896	
n-Propylbenzene	00103-65-1	1.96	1.37	2.692	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	1.36	15.948	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.33	1.266	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.32	4.211	
2,3-Dimethylpentane	00565-59-3	1.25	1.24	1.546	
2,4-Dimethylpentane	00108-08-7	1.46	1.24	1.807	
Indan	00496-11-7	3.23	1.17	3.788	
2-Methylhexane	00591-76-4	1.09	1.12	1.214	
3-Methyl-t-2-pentene	00616-12-6	11.66	1.09	12.719	
Ethylbenzene	00100-41-4	2.96	1.02	3.022	
c-2-Butene	00590-18-1	14.26	0.96	13.734	
Cyclopentene	00142-29-0	6.69	0.95	6.331	
n-Octane	00111-65-9	0.80	0.87	0.695	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.83	10.391	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.77	6.136	
3-Methylheptane	00589-81-1	1.12	0.76	0.850	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.73	8.760	

Vehicle 206b - Fuel 7 psi E10 - 86°F Static - Test 7484 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,4-Dimethylhexane	00589-43-5	1.61	0.73	1.165	
2-Methyl-2-pentene	00625-27-4	11.03	0.68	7.456	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.64	4.254	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.62	3.270	
n-Nonane	00111-84-2	0.68	0.61	0.420	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.59	4.196	
2-Methylheptane	00592-27-8	0.97	0.50	0.484	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.50	0.526	
t-1,2-Dimethylcyclopentane	00822-50-4	3.58	0.44	1.562	
2,2-DiMeHexane	00590-73-8	0.94	0.43	0.409	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.39	0.621	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.38	0.413	
c-1,3-Dimethylcyclopentane	02532-58-3	3.58	0.35	1.256	
n-Decane	00124-18-5	0.59	0.32	0.189	
2,2-Dimethylbutane	00075-83-2	1.11	0.32	0.355	
Unknown #1		3.58	0.19	0.685	
		Total	222.7	796.1	3.575
No MIR available, use weightedaverage of 3.5752					

Vehicle 206b - Fuel 7 psi E10 - 105°F Static - Test 7487

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	147.65	579.528	
Ethanol	00064-17-5	1.45	114.05	165.262	
n-Butane	00106-97-8	1.08	45.54	49.041	
2-Methylbutane (Isopentane)	00078-78-4	1.35	43.06	58.343	
n-Hexane	00110-54-3	1.13	34.97	39.680	
Benzene	00071-43-2	0.69	26.02	18.067	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	21.06	163.325	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	19.46	104.460	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	18.52	25.884	
n-Propylbenzene	00103-65-1	1.96	16.82	32.957	
2-Methyl-2-butene	00513-35-9	14.20	15.88	225.363	
n-Pentane	00109-66-0	1.21	15.41	18.723	
t-2-Pentene	00646-04-8	10.47	15.13	158.417	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	14.80	109.346	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	12.66	15.180	
3-Methylpentane	00096-14-0	1.69	12.32	20.830	
Methylcyclopentane	00096-37-7	2.05	10.73	21.986	
Cyclohexane	00110-82-7	1.14	9.05	10.289	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	7.91	34.771	
c-2-Pentene	00627-20-3	10.28	7.71	79.250	
2,3-Dimethylbutane	00079-29-8	0.90	7.11	6.388	
2-Methyl-1-butene	00563-46-2	6.38	7.09	45.221	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	6.40	74.888	
1,3,5-Trimethylbenzene	00108-67-8	11.75	5.85	68.792	
ortho-Xylene	00095-47-6	7.58	5.83	44.143	
2,3,4-Trimethylpentane	00565-75-3	0.95	5.79	5.496	
n-Heptane	00142-82-5	0.97	5.79	5.594	
Methylcyclohexane	00108-87-2	1.56	5.69	8.843	
2-Methylhexane	00591-76-4	1.09	5.12	5.559	
2,3-Dimethylpentane	00565-59-3	1.25	5.03	6.283	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	4.92	15.710	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	4.60	25.482	
t-2-Hexene	04050-45-7	8.55	4.48	38.337	
2,4-Dimethylpentane	00108-08-7	1.46	4.46	6.504	
Ethylbenzene	00100-41-4	2.96	3.71	10.987	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	3.64	19.270	
c-2-Butene	00590-18-1	14.26	3.52	50.172	
2-Methylpropane	00075-28-5	1.18	3.30	3.880	
1,2,3-Trimethylbenzene	00526-73-8	11.94	3.27	39.092	
Cyclopentene	00142-29-0	6.69	3.18	21.255	
3-Methyl-c-2-pentene	00922-62-3	12.52	3.08	38.581	
3-Methyl-t-2-pentene	00616-12-6	11.66	3.08	35.876	
n-Octane	00111-65-9	0.80	2.80	2.232	
2,4-Dimethylhexane	00589-43-5	1.61	2.74	4.399	

Vehicle 206b - Fuel 7 psi E10 - 105°F Static - Test 7487 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methylcyclopentene	00693-89-0	12.45	2.67	33.297	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	2.53	16.697	
2-Methyl-2-pentene	00625-27-4	11.03	2.52	27.769	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	2.15	3.447	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.85	14.700	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.70	1.853	
2,2-Dimethylbutane	00075-83-2	1.11	1.46	1.624	
2-Methylheptane	00592-27-8	0.97	1.45	1.402	
Cyclopentane	00287-92-3	2.24	1.42	3.170	
2,2,5-Trimethylhexane	03522-94-9	1.05	1.37	1.444	
Indan	00496-11-7	3.23	1.32	4.285	
t-1,2-Dimethylcyclopentane	00822-50-4	3.54	1.27	4.477	
n-Nonane	00111-84-2	0.68	1.23	0.841	
1,4-Diethylbenzene	00105-05-5	4.39	1.22	5.372	
2,2-DiMeHexane	00590-73-8	0.94	1.14	1.073	
3-Methylheptane	00589-81-1	1.12	1.04	1.165	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	0.98	5.651	
Isopropylbenzene (Cumene)	00098-82-8	3.54	0.92	3.268	
c-1,3-Dimethylcyclopentane	02532-58-3	3.54	0.90	3.198	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.89	6.282	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.88	0.990	
3,3-Dimethylpentane	00562-49-2	1.12	0.80	0.892	
c-1,3-Dimethylcyclohexane	00638-04-0	3.54	0.79	2.799	
n-Decane	00124-18-5	0.59	0.70	0.413	
2,2-Dimethylpentane	00590-35-2	1.04	0.67	0.700	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.67	5.234	
4-Methyloctane	02216-34-4	0.85	0.64	0.546	
3-Methyloctane	02216-33-3	0.88	0.53	0.472	
1-Nonene	00124-11-8	2.49	0.52	1.297	
Unknown #1		3.54	0.51	1.795	
Ethylcyclohexane	01678-91-7	1.35	0.50	0.667	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.49	1.887	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.45	3.360	
2,2,3-Trimethylbutane	00464-06-2	1.05	0.37	0.392	
Unknown #5		3.54	0.35	1.250	
1,3-Diethylbenzene	00141-93-5	7.08	0.34	2.397	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.31	3.284	
t-1,4-Dimethylcyclohexane	02207-04-7	3.54	0.26	0.914	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	0.23	1.703	
1,2-Diethylbenzene	00135-01-3	5.43	0.12	0.648	
		Total	759.4	2686.3	3.538
No MIR available, use weighted average of 3.5376					

Vehicle 206b - Fuel 7 psi E10 - Dynamic - Test 25760

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	127.65	501.023	
Ethanol	00064-17-5	1.45	83.31	120.716	
n-Butane	00106-97-8	1.08	43.76	47.129	
2-Methylbutane (Isopentane)	00078-78-4	1.35	33.21	44.997	
n-Hexane	00110-54-3	1.13	27.16	30.820	
Benzene	00071-43-2	0.69	24.00	16.665	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	20.12	156.011	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	18.50	99.305	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	16.26	120.071	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	13.02	18.193	
2-Methyl-2-butene	00513-35-9	14.20	11.93	169.328	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	10.31	12.362	
n-Pentane	00109-66-0	1.21	10.02	12.172	
t-2-Pentene	00646-04-8	10.47	9.93	104.038	
Methylcyclopentane	00096-37-7	2.05	9.15	18.758	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	7.28	31.989	
Cyclohexane	00110-82-7	1.14	6.92	7.872	
ortho-Xylene	00095-47-6	7.58	6.76	51.232	
3-Methylpentane	00096-14-0	1.69	6.72	11.365	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	6.47	24.707	
2,3-Dimethylbutane	00079-29-8	0.90	6.40	5.753	
Ethylene	00074-85-1	8.88	5.85	51.939	
2-Methylpropane	00075-28-5	1.18	5.82	6.846	
c-2-Pentene	00627-20-3	10.28	5.19	53.381	
1,3,5-Trimethylbenzene	00108-67-8	11.75	4.90	57.606	
n-Heptane	00142-82-5	0.97	4.76	4.601	
2-Methyl-1-butene	00563-46-2	6.38	4.55	29.012	
2,3,4-Trimethylpentane	00565-75-3	0.95	4.42	4.196	
Methylcyclohexane	00108-87-2	1.56	4.42	6.879	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	3.84	21.282	
2,3-Dimethylpentane	00565-59-3	1.25	3.74	4.675	
n-Octane	00111-65-9	0.80	3.68	2.932	
Indan	00496-11-7	3.23	3.45	11.169	
Ethylbenzene	00100-41-4	2.96	3.43	10.176	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	3.37	39.471	
t-2-Hexene	04050-45-7	8.55	3.27	27.979	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	3.21	10.252	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	3.05	24.212	
2,4-Dimethylpentane	00108-08-7	1.46	3.04	4.440	
2-Methylhexane	00591-76-4	1.09	2.57	2.794	
3-Methyl-c-2-pentene	00922-62-3	12.52	2.56	32.096	
3-Methyl-t-2-pentene	00616-12-6	11.66	2.46	28.681	
c-2-Butene	00590-18-1	14.26	2.38	33.934	
2,4-Dimethylhexane	00589-43-5	1.61	2.18	3.497	

Vehicle 206b - Fuel 7 psi E10 - Dynamic - Test 25760 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	2.18	3.497	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	2.11	13.910	
2-Methyl-2-pentene	00625-27-4	11.03	2.06	22.768	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	2.01	14.257	
c-1,3-Dimethylcyclopentane	02532-58-3	3.56	1.88	6.682	
2,2-DiMeHexane	00590-73-8	0.94	1.80	1.699	
n-Nonane	00111-84-2	0.68	1.74	1.188	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	1.42	7.511	
t-1,2-Dimethylcyclopentane	00822-50-4	3.56	1.41	5.009	
3-Methylheptane	00589-81-1	1.12	1.18	1.323	
2,2,5-Trimethylhexane	03522-94-9	1.05	1.11	1.168	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.00	1.094	
2-Methylheptane	00592-27-8	0.97	0.44	0.421	
Methane	00074-82-8	0.01	0.43	0.006	
Cyclopentene	00142-29-0	6.69	0.21	1.393	
		Total	606.0	2158.5	3.562
No MIR available, use weighted average of 3.5618					

Vehicle 206b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7495					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	938.92	3685.272	
Ethanol	00064-17-5	1.45	876.24	1269.651	
2-Methylbutane (Isopentane)	00078-78-4	1.35	561.05	760.158	
n-Hexane	00110-54-3	1.13	430.31	488.263	
n-Butane	00106-97-8	1.08	402.75	433.722	
Benzene	00071-43-2	0.69	238.37	165.516	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	208.48	291.415	
2-Methyl-2-butene	00513-35-9	14.20	201.15	2855.258	
t-2-Pentene	00646-04-8	10.47	191.91	2010.007	
n-Pentane	00109-66-0	1.21	168.04	204.158	
3-Methylpentane	00096-14-0	1.69	140.20	237.064	
Methylcyclopentane	00096-37-7	2.05	118.13	242.150	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	103.84	124.515	
Cyclohexane	00110-82-7	1.14	98.63	112.179	
c-2-Pentene	00627-20-3	10.28	93.76	964.026	
2-Methyl-1-butene	00563-46-2	6.38	80.98	516.533	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	77.52	601.227	
2,3-Dimethylbutane	00079-29-8	0.90	72.95	65.561	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	55.79	653.040	
n-Heptane	00142-82-5	0.97	55.25	53.357	
t-2-Hexene	04050-45-7	8.55	52.42	448.132	
Methylcyclohexane	00108-87-2	1.56	51.82	80.605	
2-Methylhexane	00591-76-4	1.09	47.45	51.496	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	44.04	140.517	
2,3,4-Trimethylpentane	00565-75-3	0.95	43.48	41.253	
2,4-Dimethylpentane	00108-08-7	1.46	43.09	62.880	
c-2-Butene	00590-18-1	14.26	43.00	613.201	
2,3-Dimethylpentane	00565-59-3	1.25	41.65	51.995	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	39.05	206.928	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	38.62	207.348	
Cyclopentene	00142-29-0	6.69	38.47	257.197	
3-Methyl-t-2-pentene	00616-12-6	11.66	36.34	423.683	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	36.31	268.204	
1-Methylcyclopentene	00693-89-0	12.45	35.58	443.119	
3-Methyl-c-2-pentene	00922-62-3	12.52	32.31	404.403	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	28.33	187.184	
2-Methyl-2-pentene	00625-27-4	11.03	28.26	311.775	
2-Methylpropane	00075-28-5	1.18	23.43	27.573	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	21.96	174.381	
2,4-Dimethylhexane	00589-43-5	1.61	21.71	34.862	
n-Octane	00111-65-9	0.80	20.58	16.388	
ortho-Xylene	00095-47-6	7.58	19.14	145.003	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	18.58	81.632	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	15.64	25.102	

Vehicle 206b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7495 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Cyclopentane	00287-92-3	2.24	14.32	32.040	
Ethylbenzene	00100-41-4	2.96	13.32	39.465	
1,3,5-Trimethylbenzene	00108-67-8	11.75	12.80	150.415	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	12.40	13.541	
t-1,2-Dimethylcyclopentane	00822-50-4	3.44	11.43	39.328	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	11.11	61.570	
n-Propylbenzene	00103-65-1	1.96	10.37	20.327	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	9.93	57.400	
2,2,5-Trimethylhexane	03522-94-9	1.05	9.88	10.407	
2-Methylheptane	00592-27-8	0.97	9.65	9.336	
2,2-DiMeHexane	00590-73-8	0.94	9.40	8.851	
c-1,3-Dimethylcyclopentane	02532-58-3	3.44	9.15	31.502	
2,2-Dimethylbutane	00075-83-2	1.11	8.93	9.920	
3-Methylheptane	00589-81-1	1.12	8.65	9.726	
2,2-Dimethylpentane	00590-35-2	1.04	5.95	6.207	
2,3,5-Trimethylhexane	01069-53-0	1.12	5.83	6.525	
c-1,3-Dimethylcyclohexane	00638-04-0	3.44	5.46	18.800	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	5.14	40.310	
1,2,3-Trimethylbenzene	00526-73-8	11.94	4.82	57.560	
Ethylcyclohexane	01678-91-7	1.35	4.60	6.188	
2,2,3-Trimethylbutane	00464-06-2	1.05	4.56	4.808	
n-Nonane	00111-84-2	0.68	4.00	2.731	
Propane	00074-98-6	0.46	3.83	1.751	
3,3-Dimethylpentane	00562-49-2	1.12	3.82	4.276	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	3.12	12.065	
n-Decane	00124-18-5	0.59	2.99	1.769	
t-1,4-Dimethylcyclohexane	02207-04-7	3.44	2.60	8.939	
Indan	00496-11-7	3.23	2.53	8.194	
4-Methyloctane	02216-34-4	0.85	2.52	2.138	
2-Methyl-1,3-butadiene	00078-79-5	10.48	2.51	26.290	
Isopropylbenzene (Cumene)	00098-82-8	3.44	2.43	8.367	
Unknown #5		3.44	2.39	8.239	
c-2-Heptene	06443-92-1	7.08	2.25	15.947	
t-3-Heptene	14686-14-7	6.17	2.09	12.898	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	3.44	1.80	6.193	
1,4-Diethylbenzene	00105-05-5	4.39	1.77	7.774	
Unknown #16		3.44	1.75	6.008	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	1.71	12.126	
Cyclopentadiene	00542-92-7	6.89	1.71	11.786	
3,3-Dimethylhexane	00563-16-6	1.15	1.54	1.769	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	1.48	12.428	
Unknown #8		3.44	1.40	4.829	

Vehicle 206b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7495 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	1.34	8.743	
3-Methyloctane	02216-33-3	0.88	1.22	1.078	
1,1-Dimethylcyclohexane	00590-66-9	1.12	1.15	1.278	
2,4-Dimethylheptane	02213-23-2	1.26	1.10	1.390	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	1.06	0.902	
1-Heptene	00592-76-7	4.29	0.94	4.023	
1-Nonene	00124-11-8	2.49	0.89	2.222	
sec-Butylbenzene	00135-98-8	2.29	0.81	1.846	
Unknown #3		3.44	0.80	2.746	
1,3-Diethylbenzene	00141-93-5	7.08	0.70	4.951	
Unknown #9		3.44	0.70	2.396	
Unknown #13		3.44	0.69	2.386	
Isobutylbenzene	00538-93-2	3.44	0.63	2.182	
t-2-Nonene	06434-78-2	3.44	0.63	2.178	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.58	4.371	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	0.53	0.628	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.52	2.000	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	0.50	4.927	
c- & t-4-Nonene	02198-23-4	4.42	0.48	2.117	
t-4-Octene	14850-23-8	4.69	0.35	1.632	
c-1,2-Dimethylcyclohexane	02207-01-4	3.44	0.29	1.014	
Unknown #6		3.44	0.25	0.848	
		Total	6189.7	21304.5	3.442
No MIR available, use weighted average of 3.4419					

Vehicle 206b - Fuel 9 psi E0 - 86°F Static - Test 7539

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	28.42	111.564	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	7.52	55.563	
2-Methylbutane (Isopentane)	00078-78-4	1.35	7.13	9.666	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	6.19	48.014	
Benzene	00071-43-2	0.69	5.88	4.082	
n-Hexane	00110-54-3	1.13	5.87	6.664	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	5.07	27.215	
Cyclohexane	00110-82-7	1.14	4.60	5.235	
Ethanol	00064-17-5	1.45	4.09	5.920	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	2.96	4.138	
2-Methyl-2-butene	00513-35-9	14.20	2.81	39.831	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.47	10.839	
t-2-Pentene	00646-04-8	10.47	2.06	21.590	
3-Methylpentane	00096-14-0	1.69	1.98	3.343	
n-Pentane	00109-66-0	1.21	1.96	2.379	
Methylcyclopentane	00096-37-7	2.05	1.90	3.886	
n-Butane	00106-97-8	1.08	1.81	1.948	
ortho-Xylene	00095-47-6	7.58	1.78	13.522	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.76	2.108	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.73	20.357	
2,3-Dimethylbutane	00079-29-8	0.90	1.49	1.337	
Ethylbenzene	00100-41-4	2.96	1.26	3.726	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.23	6.812	
c-2-Pentene	00627-20-3	10.28	1.12	11.502	
n-Propylbenzene	00103-65-1	1.96	1.09	2.135	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.01	0.954	
Methylcyclohexane	00108-87-2	1.56	0.98	1.525	
n-Heptane	00142-82-5	0.97	0.96	0.928	
2-Methyl-1-butene	00563-46-2	6.38	0.88	5.615	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.87	5.756	
2,4-Dimethylhexane	00589-43-5	1.61	0.86	1.384	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.80	4.257	
t-2-Hexene	04050-45-7	8.55	0.80	6.807	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.73	0.771	
2,3-Dimethylpentane	00565-59-3	1.25	0.72	0.896	
2,4-Dimethylpentane	00108-08-7	1.46	0.71	1.042	
2-Methylhexane	00591-76-4	1.09	0.70	0.763	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.70	8.716	
2-Methyl-2-pentene	00625-27-4	11.03	0.64	7.012	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.63	7.327	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.61	7.312	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.60	1.907	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.59	6.955	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.55	0.879	
Cyclopentene	00142-29-0	6.69	0.52	3.502	

Vehicle 206b - Fuel 9 psi E0 - 86°F Static - Test 7539 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Octane	00111-65-9	0.80	0.52	0.416	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.49	0.533	
2,2-DiMeHexane	00590-73-8	0.94	0.43	0.404	
Indan	00496-11-7	3.23	0.40	1.304	
t-1,2-Dimethylcyclopentane	00822-50-4	4.16	0.37	1.551	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.36	2.879	
c-2-Butene	00590-18-1	14.26	0.33	4.698	
c-1,3-Dimethylcyclopentane	02532-58-3	4.16	0.29	1.219	
2-Methylheptane	00592-27-8	0.97	0.29	0.282	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.24	0.266	
		Total	122.8	511.2	4.164
No MIR available, use weighted average of 4.1644					

Vehicle 206b - Fuel 9 psi E0 - 105°F Static - Test 7545					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	56.24	220.748	
2-Methylbutane (Isopentane)	00078-78-4	1.35	31.47	42.640	
n-Butane	00106-97-8	1.08	27.75	29.885	
Ethanol	00064-17-5	1.45	18.75	27.170	
n-Hexane	00110-54-3	1.13	14.82	16.814	
Cyclohexane	00110-82-7	1.14	14.24	16.195	
Benzene	00071-43-2	0.69	11.97	8.310	
3-Methylpentane	00096-14-0	1.69	9.31	15.741	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	8.95	69.388	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	8.75	12.227	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	7.68	41.259	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	6.63	7.955	
2-Methyl-2-butene	00513-35-9	14.20	6.51	92.459	
n-Pentane	00109-66-0	1.21	5.80	7.045	
t-2-Pentene	00646-04-8	10.47	5.17	54.128	
Methylcyclopentane	00096-37-7	2.05	4.89	10.023	
c-2-Pentene	00627-20-3	10.28	2.88	29.587	
2,3,4-Trimethylpentane	00565-75-3	0.95	2.79	2.644	
2-Methyl-1-butene	00563-46-2	6.38	2.61	16.619	
ortho-Xylene	00095-47-6	7.58	2.50	18.977	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	2.17	6.934	
2,4-Dimethylpentane	00108-08-7	1.46	2.16	3.155	
2,3-Dimethylpentane	00565-59-3	1.25	2.08	2.600	
2-Methylhexane	00591-76-4	1.09	1.85	2.008	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.83	8.034	
t-2-Hexene	04050-45-7	8.55	1.76	15.011	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	1.52	17.837	
2,3-Dimethylbutane	00079-29-8	0.90	1.52	1.367	
3-Methyl-t-2-pentene	00616-12-6	11.66	1.41	16.427	
n-Heptane	00142-82-5	0.97	1.26	1.219	
		Total	267.3	814.4	3.047

Vehicle 206b - Fuel 9 psi E0 - Dynamic - Test 25775					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	64.08	251.497	
2-Methylbutane (Isopentane)	00078-78-4	1.35	26.84	36.363	
n-Butane	00106-97-8	1.08	24.36	26.232	
Ethanol	00064-17-5	1.45	20.34	29.475	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	14.47	112.251	
Benzene	00071-43-2	0.69	14.46	10.043	
n-Hexane	00110-54-3	1.13	12.90	14.640	
Cyclohexane	00110-82-7	1.14	12.33	14.027	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	11.79	63.296	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	9.26	12.942	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	9.15	67.583	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	7.41	8.883	
3-Methylpentane	00096-14-0	1.69	7.05	11.922	
2,3-Dimethylbutane	00079-29-8	0.90	6.92	6.221	
2-Methyl-2-butene	00513-35-9	14.20	5.98	84.864	
1,3,5-Trimethylbenzene	00108-67-8	11.75	5.80	68.169	
Methylcyclopentane	00096-37-7	2.05	5.38	11.030	
n-Pentane	00109-66-0	1.21	5.37	6.527	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	4.99	21.931	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	4.33	50.669	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	3.75	19.859	
c-2-Butene	00590-18-1	14.26	3.62	51.692	
ortho-Xylene	00095-47-6	7.58	3.60	27.299	
1,2,3-Trimethylbenzene	00526-73-8	11.94	3.45	41.143	
t-2-Pentene	00646-04-8	10.47	3.28	34.359	
n-Propylbenzene	00103-65-1	1.96	3.27	6.414	
2,2-DiMeHexane	00590-73-8	0.94	3.27	3.080	
n-Heptane	00142-82-5	0.97	3.24	3.129	
2,3,4-Trimethylpentane	00565-75-3	0.95	3.20	3.034	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	2.89	22.970	
Indan	00496-11-7	3.23	2.83	9.149	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	2.74	8.729	
Methylcyclohexane	00108-87-2	1.56	2.68	4.173	
2-Methyl-1-butene	00563-46-2	6.38	2.68	17.071	
Ethylbenzene	00100-41-4	2.96	2.61	7.747	
2,3-Dimethylpentane	00565-59-3	1.25	2.59	3.228	
2,2,5-Trimethylhexane	03522-94-9	1.05	2.54	2.674	
2,4-Dimethylpentane	00108-08-7	1.46	2.27	3.306	
2-Methylhexane	00591-76-4	1.09	2.24	2.435	
Unknown #22		3.76	2.06	7.762	
2-Methyl-2-pentene	00625-27-4	11.03	2.05	22.639	
Cyclopentene	00142-29-0	6.69	1.87	12.476	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	1.72	11.343	
c-2-Pentene	00627-20-3	10.28	1.51	15.533	

Vehicle 206b - Fuel 9 psi E0 - Dynamic - Test 25775 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
3-Methyl-c-2-pentene	00922-62-3	12.52	1.49	18.609	
t-2-Hexene	04050-45-7	8.55	1.42	12.172	
3-Methyl-t-2-pentene	00616-12-6	11.66	1.24	14.404	
2,2-Dimethylbutane	00075-83-2	1.11	1.22	1.350	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.16	6.454	
n-Octane	00111-65-9	0.80	1.13	0.901	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.99	10.330	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.94	1.021	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.83	1.339	
Methane	00074-82-8	0.01	0.50	0.007	
		Total	350.1	1316.4	3.760
No MIR available, use weighted average of 3.7602					

Vehicle 206b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7551

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	482.40	1893.416	
2-Methylbutane (Isopentane)	00078-78-4	1.35	480.37	650.844	
n-Butane	00106-97-8	1.08	442.07	476.067	
Cyclohexane	00110-82-7	1.14	212.89	242.139	
n-Hexane	00110-54-3	1.13	209.35	237.545	
Ethanol	00064-17-5	1.45	189.89	275.142	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	139.65	195.200	
Benzene	00071-43-2	0.69	117.42	81.533	
2-Methyl-2-butene	00513-35-9	14.20	98.71	1401.233	
3-Methylpentane	00096-14-0	1.69	94.97	160.588	
n-Pentane	00109-66-0	1.21	85.36	103.713	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	82.11	98.461	
Methylcyclopentane	00096-37-7	2.05	76.82	157.466	
t-2-Pentene	00646-04-8	10.47	75.24	788.046	
2,3-Dimethylbutane	00079-29-8	0.90	66.61	59.861	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	53.35	413.777	
c-2-Pentene	00627-20-3	10.28	40.05	411.810	
2-Methyl-1-butene	00563-46-2	6.38	39.72	253.383	
2,3,4-Trimethylpentane	00565-75-3	0.95	34.59	32.824	
2,4-Dimethylpentane	00108-08-7	1.46	31.16	45.466	
2-Methylhexane	00591-76-4	1.09	29.55	32.072	
2,3-Dimethylpentane	00565-59-3	1.25	28.32	35.350	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	28.01	89.386	
t-2-Hexene	04050-45-7	8.55	26.19	223.900	
Methylcyclohexane	00108-87-2	1.56	24.94	38.791	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	24.14	282.494	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	24.07	177.752	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	23.79	127.748	
n-Heptane	00142-82-5	0.97	22.63	21.858	
3-Methyl-t-2-pentene	00616-12-6	11.66	22.01	256.629	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	21.78	115.424	
1-Methylcyclopentene	00693-89-0	12.45	20.29	252.744	
Cyclopentene	00142-29-0	6.69	19.34	129.339	
3-Methyl-c-2-pentene	00922-62-3	12.52	19.22	240.649	
2-Methyl-2-pentene	00625-27-4	11.03	17.22	189.990	
2,4-Dimethylhexane	00589-43-5	1.61	16.53	26.536	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	15.36	101.470	
c-2-Butene	00590-18-1	14.26	14.11	201.260	
ortho-Xylene	00095-47-6	7.58	13.88	105.180	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	11.63	18.678	
2,2-DiMeHexane	00590-73-8	0.94	11.02	10.376	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	10.52	46.229	
Ethylbenzene	00100-41-4	2.96	10.44	30.930	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	9.22	73.213	

Vehicle 206b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7551 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,2-Dimethylbutane	00075-83-2	1.11	9.08	10.085	
2,2,5-Trimethylhexane	03522-94-9	1.05	8.92	9.390	
n-Octane	00111-65-9	0.80	8.35	6.647	
1,3,5-Trimethylbenzene	00108-67-8	11.75	8.33	97.916	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	8.23	8.991	
t-1,2-Dimethylcyclopentane	00822-50-4	3.09	7.69	23.786	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	7.20	39.925	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	6.84	39.518	
c-1,3-Dimethylcyclopentane	02532-58-3	3.09	6.24	19.303	
n-Propylbenzene	00103-65-1	1.96	5.57	10.911	
3-Methylheptane	00589-81-1	1.12	5.23	5.876	
2-Methylheptane	00592-27-8	0.97	5.03	4.870	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	3.89	30.472	
2,2-Dimethylpentane	00590-35-2	1.04	3.87	4.038	
3,3-Dimethylpentane	00562-49-2	1.12	3.73	4.175	
2,2,3-Trimethylbutane	00464-06-2	1.05	3.60	3.798	
c-1,3-Dimethylcyclohexane	00638-04-0	3.09	3.17	9.825	
2-Methylpropane	00075-28-5	1.18	3.12	3.672	
1,2,3-Trimethylbenzene	00526-73-8	11.94	3.03	36.182	
Unknown #5		3.09	2.11	6.544	
c-2-Heptene	06443-92-1	7.08	2.11	14.958	
Ethylcyclohexane	01678-91-7	1.35	2.02	2.715	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	1.97	7.620	
Unknown #16		3.09	1.72	5.322	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	1.65	11.656	
Isopropylbenzene (Cumene)	00098-82-8	3.09	1.60	4.963	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.56	1.748	
1,3-Butadiene	00106-99-0	12.45	1.54	19.233	
Indan	00496-11-7	3.23	1.46	4.717	
t-3-Heptene	14686-14-7	6.17	1.43	8.832	
1,4-Diethylbenzene	00105-05-5	4.39	1.41	6.209	
2-Methyl-1,3-butadiene	00078-79-5	10.48	1.35	14.151	
Ethylene	00074-85-1	8.88	1.32	11.722	
Unknown #8		3.09	1.30	4.009	
t-1,4-Dimethylcyclohexane	02207-04-7	3.09	1.29	3.993	
4-Methyloctane	02216-34-4	0.85	1.27	1.080	
n-Nonane	00111-84-2	0.68	1.27	0.864	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	3.09	1.25	3.877	
3,5-Dimethylheptane	00926-82-9	1.42	1.22	1.734	
1,1-Dimethylcyclohexane	00590-66-9	1.12	1.15	1.277	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	1.13	7.421	
3,3-Dimethylhexane	00563-16-6	1.15	1.10	1.263	

Vehicle 206b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7551 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Unknown #13		3.09	1.10	3.390	
2,4-Dimethylheptane	02213-23-2	1.26	1.09	1.382	
3-Methyloctane	02216-33-3	0.88	1.07	0.950	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	1.03	8.638	
1-Nonene	00124-11-8	2.49	0.95	2.364	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.91	7.338	
1-Heptene	00592-76-7	4.29	0.82	3.498	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	0.81	0.690	
Unknown #3		3.09	0.75	2.322	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	0.72	5.457	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.66	5.010	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	0.61	0.726	
1,3-Diethylbenzene	00141-93-5	7.08	0.61	4.323	
n-Decane	00124-18-5	0.59	0.61	0.360	
Unknown #6	.	3.09	0.60	1.872	
t-4-Octene	14850-23-8	4.69	0.55	2.561	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	0.50	4.857	
sec-Butylbenzene	00135-98-8	2.29	0.48	1.111	
3-Methylnonane	005911-04-6	0.66	0.44	0.287	
t-2-Nonene	06434-78-2	3.09	0.33	1.012	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.28	1.056	
		Total	3677.3	11381.0	3.095
No MIR available, use weighted average of 3.0950					

Vehicle 206b - Fuel 7 psi E0 - 86°F Static - Test 7561

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	15.58	61.151	
n-Butane	00106-97-8	1.08	6.84	7.366	
2-Methylbutane (Isopentane)	00078-78-4	1.35	5.87	7.949	
n-Hexane	00110-54-3	1.13	3.78	4.289	
Cyclohexane	00110-82-7	1.14	3.76	4.273	
Ethanol	00064-17-5	1.45	3.54	5.131	
Benzene	00071-43-2	0.69	2.82	1.959	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	2.58	19.984	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	2.19	3.056	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	2.10	15.524	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	2.02	10.860	
2-Methyl-2-butene	00513-35-9	14.20	1.67	23.717	
t-2-Pentene	00646-04-8	10.47	1.65	17.267	
n-Pentane	00109-66-0	1.21	1.54	1.867	
3-Methylpentane	00096-14-0	1.69	1.38	2.341	
Methylcyclopentane	00096-37-7	2.05	1.36	2.795	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.35	1.624	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.32	5.782	
ortho-Xylene	00095-47-6	7.58	1.25	9.434	
2,3-Dimethylbutane	00079-29-8	0.90	1.01	0.904	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.97	11.459	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.90	0.852	
2-Methyl-1-butene	00563-46-2	6.38	0.74	4.693	
c-2-Pentene	00627-20-3	10.28	0.70	7.167	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.61	0.679	
2-Methylheptane	00592-27-8	0.97	0.59	0.566	
t-2-Hexene	04050-45-7	8.55	0.57	4.910	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.52	6.070	
2,4-Dimethylpentane	00108-08-7	1.46	0.51	0.744	
2,4-Dimethylhexane	00589-43-5	1.61	0.49	0.789	
Cyclopentene	00142-29-0	6.69	0.49	3.270	
Ethylbenzene	00100-41-4	2.96	0.49	1.439	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.48	1.538	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.47	3.085	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.43	3.442	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.43	4.996	
n-Propylbenzene	00103-65-1	1.96	0.40	0.791	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.40	4.801	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.39	2.161	
Methylcyclohexane	00108-87-2	1.56	0.38	0.596	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.38	0.414	
n-Heptane	00142-82-5	0.97	0.38	0.362	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.36	1.934	
2-Methyl-2-pentene	00625-27-4	11.03	0.35	3.908	
2,3-Dimethylpentane	00565-59-3	1.25	0.31	0.390	

Vehicle 206b - Fuel 7 psi E0 - 86°F Static - Test 7561 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,2-DiMeHexane	00590-73-8	0.94	0.30	0.287	
3-Methylheptane	00589-81-1	1.12	0.29	0.326	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.26	3.292	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.25	0.395	
n-Octane	00111-65-9	0.80	0.13	0.107	
Indan	00496-11-7	3.23	0.12	0.388	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.09	0.100	
c-2-Butene	00590-18-1	14.26	0.08	1.104	
c-1,3-Dimethylcyclopentane	02532-58-3	3.65	0.06	0.235	
t-1,2-Dimethylcyclopentane	00822-50-4	3.65	0.06	0.230	
2-Methylhexane	00591-76-4	1.09	0.02	0.024	
		Total	78.0	284.8	3.651
No MIR available, use weighted average of 3.6506					

Vehicle 206b - Fuel 7 psi E0 - 105°F Static - Test 7563					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	38.00	149.142	
2-Methylbutane (Isopentane)	00078-78-4	1.35	19.36	26.230	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	18.15	134.070	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	14.53	112.710	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	14.41	77.345	
Cyclohexane	00110-82-7	1.14	10.72	12.197	
n-Butane	00106-97-8	1.08	10.60	11.418	
n-Hexane	00110-54-3	1.13	9.62	10.917	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	5.96	8.332	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	5.36	23.532	
1,3,5-Trimethylbenzene	00108-67-8	11.75	4.71	55.405	
t-2-Hexene	04050-45-7	8.55	4.53	38.693	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	4.38	5.253	
3-Methylpentane	00096-14-0	1.69	4.29	7.258	
ortho-Xylene	00095-47-6	7.58	4.10	31.052	
Benzene	00071-43-2	0.69	4.08	2.834	
2-Methyl-2-butene	00513-35-9	14.20	3.95	56.048	
n-Pentane	00109-66-0	1.21	3.62	4.399	
Methylcyclopentane	00096-37-7	2.05	3.55	7.277	
t-2-Pentene	00646-04-8	10.47	2.90	30.371	
2,3,4-Trimethylpentane	00565-75-3	0.95	2.10	1.990	
2-Methyl-1-butene	00563-46-2	6.38	1.62	10.340	
c-2-Pentene	00627-20-3	10.28	1.59	16.337	
2-Methylhexane	00591-76-4	1.09	1.57	1.708	
2,3-Dimethylpentane	00565-59-3	1.25	1.54	1.925	
2,4-Dimethylpentane	00108-08-7	1.46	1.50	2.196	
n-Heptane	00142-82-5	0.97	1.37	1.326	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.36	4.345	
2,3-Dimethylbutane	00079-29-8	0.90	1.23	1.108	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.73	8.575	
		Total	201.5	854.3	4.241

Vehicle 206b - Fuel 7 psi E0 - Dynamic - Test 25780

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	52.27	205.169	
2-Methylbutane (Isopentane)	00078-78-4	1.35	21.18	28.691	
n-Butane	00106-97-8	1.08	17.56	18.909	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	11.14	86.374	
Benzene	00071-43-2	0.69	10.11	7.019	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	9.16	49.186	
n-Hexane	00110-54-3	1.13	8.99	10.198	
Cyclohexane	00110-82-7	1.14	8.66	9.847	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	7.69	56.815	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	6.08	8.496	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	5.09	6.101	
3-Methylpentane	00096-14-0	1.69	4.86	8.217	
2,3-Dimethylbutane	00079-29-8	0.90	4.66	4.187	
2-Methyl-2-butene	00513-35-9	14.20	4.53	64.340	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	4.27	18.778	
n-Pentane	00109-66-0	1.21	4.27	5.185	
1,3,5-Trimethylbenzene	00108-67-8	11.75	4.25	49.992	
Methylcyclopentane	00096-37-7	2.05	4.24	8.698	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	3.37	39.442	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	2.70	14.330	
ortho-Xylene	00095-47-6	7.58	2.62	19.839	
2,3,4-Trimethylpentane	00565-75-3	0.95	2.58	2.444	
1,2,3-Trimethylbenzene	00526-73-8	11.94	2.54	30.367	
c-2-Butene	00590-18-1	14.26	2.49	35.498	
2,2-DiMeHexane	00590-73-8	0.94	2.49	2.341	
n-Heptane	00142-82-5	0.97	2.40	2.314	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	2.30	18.263	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	2.30	7.336	
t-2-Pentene	00646-04-8	10.47	2.28	23.914	
n-Propylbenzene	00103-65-1	1.96	2.19	4.300	
Ethylbenzene	00100-41-4	2.96	2.13	6.323	
Indan	00496-11-7	3.23	2.08	6.717	
Methylcyclohexane	00108-87-2	1.56	2.04	3.168	
2,2,5-Trimethylhexane	03522-94-9	1.05	1.99	2.097	
2,3-Dimethylpentane	00565-59-3	1.25	1.96	2.444	
2-Methyl-1-butene	00563-46-2	6.38	1.91	12.175	
2-Methylhexane	00591-76-4	1.09	1.74	1.885	
2,4-Dimethylpentane	00108-08-7	1.46	1.68	2.456	
2-Methyl-2-pentene	00625-27-4	11.03	1.53	16.928	
Unknown #22	.	3.96	1.44	5.705	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	1.40	9.255	
Cyclopentene	00142-29-0	6.69	1.27	8.475	
c-2-Pentene	00627-20-3	10.28	1.26	12.931	
t-2-Hexene	04050-45-7	8.55	1.20	10.235	

Vehicle 206b - Fuel 7 psi E0 - Dynamic - Test 25780 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
3-Methyl-c-2-pentene	00922-62-3	12.52	1.13	14.097	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.00	5.542	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.91	10.619	
2,2-Dimethylbutane	00075-83-2	1.11	0.90	0.997	
n-Octane	00111-65-9	0.80	0.88	0.701	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.73	0.797	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.65	6.780	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.61	0.986	
		Total	249.7	987.9	3.956
No MIR available, use weighted average of 3.9564					

Vehicle 206b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7567					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	418.45	566.959	
Toluene	00108-88-3	3.93	354.98	1393.317	
n-Butane	00106-97-8	1.08	206.12	221.975	
Cyclohexane	00110-82-7	1.14	199.31	226.692	
n-Hexane	00110-54-3	1.13	164.51	186.670	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	118.19	165.211	
Ethanol	00064-17-5	1.45	107.80	156.198	
Benzene	00071-43-2	0.69	84.73	58.835	
3-Methylpentane	00096-14-0	1.69	80.52	136.149	
2-Methyl-2-butene	00513-35-9	14.20	75.59	1072.971	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	72.16	86.528	
n-Pentane	00109-66-0	1.21	67.66	82.200	
Methylcyclopentane	00096-37-7	2.05	63.94	131.069	
2,3-Dimethylbutane	00079-29-8	0.90	57.89	52.025	
t-2-Pentene	00646-04-8	10.47	55.50	581.294	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	42.28	327.932	
2,3,4-Trimethylpentane	00565-75-3	0.95	31.57	29.955	
2-Methyl-1-butene	00563-46-2	6.38	30.98	197.581	
c-2-Pentene	00627-20-3	10.28	30.32	311.693	
2,4-Dimethylpentane	00108-08-7	1.46	26.70	38.957	
2-Methylhexane	00591-76-4	1.09	25.34	27.500	
2,3-Dimethylpentane	00565-59-3	1.25	23.93	29.876	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	23.58	75.240	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	20.51	110.102	
Methylcyclohexane	00108-87-2	1.56	20.37	31.681	
t-2-Hexene	04050-45-7	8.55	19.96	170.626	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	18.36	214.937	
3-Methyl-t-2-pentene	00616-12-6	11.66	17.54	204.459	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	17.54	92.912	
n-Heptane	00142-82-5	0.97	17.48	16.882	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	16.23	119.835	
1-Methylcyclopentene	00693-89-0	12.45	15.37	191.440	
3-Methyl-c-2-pentene	00922-62-3	12.52	15.18	190.024	
Cyclopentene	00142-29-0	6.69	14.82	99.067	
2,4-Dimethylhexane	00589-43-5	1.61	14.18	22.763	
2-Methyl-2-pentene	00625-27-4	11.03	14.12	155.789	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	12.02	79.430	
ortho-Xylene	00095-47-6	7.58	11.39	86.265	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	10.87	17.454	
c-2-Butene	00590-18-1	14.26	10.65	151.850	
2,2-DiMeHexane	00590-73-8	0.94	9.27	8.730	
2,2,5-Trimethylhexane	03522-94-9	1.05	8.74	9.207	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	8.43	37.046	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	8.27	9.027	

Vehicle 206b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7567 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethylbenzene	00100-41-4	2.96	8.16	24.176	
2,2-Dimethylbutane	00075-83-2	1.11	7.90	8.782	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	6.86	54.489	
1,3,5-Trimethylbenzene	00108-67-8	11.75	6.74	79.229	
n-Octane	00111-65-9	0.80	6.54	5.207	
t-1,2-Dimethylcyclopentane	00822-50-4	3.11	6.35	19.727	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	6.09	33.755	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	5.52	31.865	
c-1,3-Dimethylcyclopentane	02532-58-3	3.11	5.27	16.373	
2-Methylheptane	00592-27-8	0.97	4.81	4.654	
3-Methylheptane	00589-81-1	1.12	4.54	5.110	
n-Propylbenzene	00103-65-1	1.96	4.54	8.898	
2,2-Dimethylpentane	00590-35-2	1.04	3.35	3.496	
2,2,3-Trimethylbutane	00464-06-2	1.05	3.25	3.425	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	3.18	24.924	
3,3-Dimethylpentane	00562-49-2	1.12	3.16	3.534	
2-Methylpropane	00075-28-5	1.18	3.06	3.600	
c-1,3-Dimethylcyclohexane	00638-04-0	3.11	2.75	8.529	
1,2,3-Trimethylbenzene	00526-73-8	11.94	2.49	29.713	
Unknown #5		3.11	1.98	6.152	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.89	2.120	
Indan	00496-11-7	3.23	1.83	5.910	
3,3-Dimethylhexane	00563-16-6	1.15	1.68	1.936	
c-2-Heptene	06443-92-1	7.08	1.67	11.836	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	1.65	6.357	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	1.51	10.682	
3,5-Dimethylheptane	00926-82-9	1.42	1.42	2.020	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	3.11	1.41	4.373	
n-Decane	00124-18-5	0.59	1.33	0.787	
Isopropylbenzene (Cumene)	00098-82-8	3.11	1.32	4.094	
t-1,4-Dimethylcyclohexane	02207-04-7	3.11	1.20	3.724	
t-3-Heptene	14686-14-7	6.17	1.19	7.312	
1,1-Dimethylcyclohexane	00590-66-9	1.12	1.13	1.265	
Unknown #13		3.11	1.12	3.470	
n-Nonane	00111-84-2	0.68	1.09	0.743	
2-Methyl-1,3-butadiene	00078-79-5	10.48	1.07	11.233	
4-Methyloctane	02216-34-4	0.85	1.06	0.897	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	1.02	6.648	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.84	6.747	
Unknown #16		3.11	0.81	2.525	
1-Nonene	00124-11-8	2.49	0.80	1.983	
1-Heptene	00592-76-7	4.29	0.77	3.322	

Vehicle 206b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7567 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,4-Dimethylheptane	02213-23-2	1.26	0.76	0.956	
Unknown #3		3.11	0.74	2.297	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.73	6.103	
3-Methylnonane	005911-04-6	0.66	0.72	0.470	
3-Methyloctane	02216-33-3	0.88	0.67	0.593	
Unknown #8		3.11	0.58	1.812	
t-4-Octene	14850-23-8	4.69	0.50	2.360	
Unknown #6	.	3.11	0.46	1.413	
1,3-Diethylbenzene	00141-93-5	7.08	0.45	3.221	
sec-Butylbenzene	00135-98-8	2.29	0.45	1.028	
1,4-Diethylbenzene	00105-05-5	4.39	0.45	1.964	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	0.43	4.156	
Isobutylbenzene	00538-93-2	3.11	0.42	1.320	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.40	1.538	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.38	2.877	
t-2-Nonene	06434-78-2	3.11	0.38	1.168	
c-2-Octene	07642-04-8	3.11	0.32	0.981	
Unknown #9		3.11	0.26	0.798	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	0.23	0.194	
		Total	2797.0	8687.2	3.106
No MIR available, use weighted average of 3.1059					

Vehicle 208b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7413	75.6	127.7	96.6	413.8	4.284	42
Static	E10 - 7 psi	7478	50.5	102.6	51.9	136.0	2.623	40
	E0 - 9 psi	7530	74.2	121.3	90.0	287.6	3.195	52
	E0 - 7 psi	7568	49.6	102.0	50.6	159.2	3.146	55
105° F	E10 - 10 psi	7415	115.2	110.4	127.1	415.6	3.268	59
Static	E10 - 7 psi	7480	105.4	104.1	109.7	391.9	3.572	76
	E0 - 9 psi	7532	112.7	102.4	115.4	370.1	3.207	60
	E0 - 7 psi	7570	123.9	94.4	117.0	403.3	3.448	63
Dynamic	E10 - 10 psi	25744	337.0	95.8	322.8	1369.5	4.242	56
	E10 - 7 psi	25759	308.3	132.8	409.4	1718.9	4.198	72
	E0 - 9 psi	25771	257.5	159.1	409.6	1853.2	4.524	52
	E0 - 7 psi	25782	199.7	51.9	103.6	353.6	3.413	40
DHB	E10 - 10 psi	7463	1852.2	103.6	1919.2	5628.6	2.933	107
Total	E10 - 7 psi	7489	1740.5	89.3	1554.4	5099.2	3.281	107
	E0 - 9 psi	7556	1864.6	93.2	1737.6	4606.5	2.651	98
	E0 - 7 psi	7575	1317.5	88.6	1167.2	3392.4	2.906	86

Vehicle 208b - Fuel 10 psi E10 - 86°F Static - Test 7413					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	11.06	43.423	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	9.50	51.027	
Ethanol	00064-17-5	1.45	8.80	12.744	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	7.88	58.214	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	6.52	50.528	
2,3,4-Trimethylpentane	00565-75-3	0.95	6.12	5.809	
2-Methylbutane (Isopentane)	00078-78-4	1.35	5.78	7.827	
n-Butane	00106-97-8	1.08	4.61	4.969	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	3.24	14.225	
1,3,5-Trimethylbenzene	00108-67-8	11.75	3.10	36.422	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	2.81	15.597	
n-Hexane	00110-54-3	1.13	2.69	3.057	
ortho-Xylene	00095-47-6	7.58	2.58	19.561	
Methylcyclopentane	00096-37-7	2.05	1.93	3.948	
Benzene	00071-43-2	0.69	1.76	1.221	
n-Propylbenzene	00103-65-1	1.96	1.58	3.099	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.45	1.744	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.44	17.177	
Ethylbenzene	00100-41-4	2.96	1.24	3.660	
n-Pentane	00109-66-0	1.21	1.19	1.449	
Cyclohexane	00110-82-7	1.14	1.18	1.343	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.11	1.548	
2-Methyl-2-butene	00513-35-9	14.20	1.04	14.692	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.94	1.514	
3-Methylpentane	00096-14-0	1.69	0.88	1.490	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.74	8.623	
t-2-Pentene	00646-04-8	10.47	0.59	6.160	
Methylcyclohexane	00108-87-2	1.56	0.54	0.834	
n-Heptane	00142-82-5	0.97	0.49	0.475	
2-Methyl-1-butene	00563-46-2	6.38	0.44	2.778	
2-Methylpropane	00075-28-5	1.18	0.42	0.489	
n-Octane	00111-65-9	0.80	0.41	0.327	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.38	4.469	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.37	4.629	
2-Methylhexane	00591-76-4	1.09	0.35	0.379	
t-2-Hexene	04050-45-7	8.55	0.31	2.689	
c-2-Pentene	00627-20-3	10.28	0.29	2.966	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.26	0.845	
2,3-Dimethylpentane	00565-59-3	1.25	0.25	0.309	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.17	0.176	
c-2-Butene	00590-18-1	14.26	0.09	1.292	
2,4-Dimethylpentane	00108-08-7	1.46	0.08	0.123	
		Total	96.6	413.8	4.284

Vehicle 208b - Fuel 10 psi E10 - 105°F Static - Test 7424					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	23.14	33.536	
Toluene	00108-88-3	3.93	19.45	76.343	
2-Methylbutane (Isopentane)	00078-78-4	1.35	10.42	14.119	
n-Butane	00106-97-8	1.08	7.49	8.064	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	5.05	27.126	
n-Hexane	00110-54-3	1.13	4.57	5.181	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	3.70	28.705	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	3.14	4.383	
Benzene	00071-43-2	0.69	2.84	1.974	
n-Pentane	00109-66-0	1.21	2.46	2.983	
2-Methyl-2-butene	00513-35-9	14.20	2.36	33.500	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	2.17	2.601	
t-2-Pentene	00646-04-8	10.47	1.99	20.809	
3-Methylpentane	00096-14-0	1.69	1.90	3.216	
Methylcyclopentane	00096-37-7	2.05	1.69	3.469	
2,3-Dimethylbutane	00079-29-8	0.90	1.63	1.468	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.59	18.644	
Methylcyclohexane	00108-87-2	1.56	1.55	2.413	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.50	8.314	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.50	6.592	
n-Heptane	00142-82-5	0.97	1.49	1.436	
Cyclohexane	00110-82-7	1.14	1.39	1.584	
2-Methylhexane	00591-76-4	1.09	1.27	1.376	
ortho-Xylene	00095-47-6	7.58	1.22	9.263	
2-Methylpropane	00075-28-5	1.18	1.21	1.422	
2-Methyl-1-butene	00563-46-2	6.38	1.14	7.282	
c-2-Pentene	00627-20-3	10.28	1.03	10.608	
2,2-DiMeHexane	00590-73-8	0.94	0.98	0.922	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.97	0.920	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.95	3.018	
2,3-Dimethylpentane	00565-59-3	1.25	0.84	1.051	
3-Methylheptane	00589-81-1	1.12	0.79	0.889	
n-Octane	00111-65-9	0.80	0.77	0.616	
n-Decane	00124-18-5	0.59	0.77	0.455	
Cyclopentene	00142-29-0	6.69	0.77	5.133	
n-Propylbenzene	00103-65-1	1.96	0.76	1.488	
2,4-Dimethylpentane	00108-08-7	1.46	0.72	1.053	
Ethylbenzene	00100-41-4	2.96	0.65	1.934	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.65	7.749	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.64	7.434	
t-2-Hexene	04050-45-7	8.55	0.63	5.402	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.60	0.677	
2,4-Dimethylhexane	00589-43-5	1.61	0.58	0.937	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.56	2.979	

Vehicle 208b - Fuel 10 psi E10 - 105°F Static - Test 7424 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.54	3.538	
c-2-Butene	00590-18-1	14.26	0.53	7.599	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.52	4.101	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.50	6.302	
t-1,2-Dimethylcyclopentane	00822-50-4	3.27	0.48	1.564	
n-Nonane	00111-84-2	0.68	0.44	0.301	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.41	0.653	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.39	2.790	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.36	4.246	
2-Methyl-2-pentene	00625-27-4	11.03	0.33	3.663	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.32	0.336	
2-Methylheptane	00592-27-8	0.97	0.27	0.260	
c-1,3-Dimethylcyclopentane	02532-58-3	3.27	0.26	0.858	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.19	0.208	
2,2-Dimethylbutane	00075-83-2	1.11	0.07	0.081	
		Total	127.1	415.6	3.268
No MIR available, use weighted average of 3.2684					

Vehicle 208b - Fuel 10 psi E10 - Dynamic - Test 25744					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	43.48	170.672	
n-Propylbenzene	00103-65-1	1.96	31.22	61.185	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	28.49	152.962	
Ethanol	00064-17-5	1.45	20.14	29.185	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	19.58	144.613	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	11.37	88.165	
n-Butane	00106-97-8	1.08	10.88	11.720	
1,3,5-Trimethylbenzene	00108-67-8	11.75	10.32	121.351	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	9.53	41.872	
2-Methylbutane (Isopentane)	00078-78-4	1.35	8.30	11.251	
n-Hexane	00110-54-3	1.13	8.20	9.301	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	7.69	42.632	
Benzene	00071-43-2	0.69	7.47	5.186	
2-Methylpropane	00075-28-5	1.18	7.08	8.325	
n-Decane	00124-18-5	0.59	6.26	3.702	
1,2,3-Trimethylbenzene	00526-73-8	11.94	5.96	71.104	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	4.97	39.448	
ortho-Xylene	00095-47-6	7.58	4.95	37.537	
Unknown #22		4.24	4.48	19.024	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	4.38	5.256	
1,3-Butadiene	00106-99-0	12.45	3.93	48.972	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	3.62	5.061	
2,3-Dimethylbutane	00079-29-8	0.90	3.47	3.114	
Indan	00496-11-7	3.23	3.32	10.737	
n-Octane	00111-65-9	0.80	3.11	2.478	
3-Methylpentane	00096-14-0	1.69	2.93	4.958	
Methylcyclohexane	00108-87-2	1.56	2.75	4.275	
n-Nonane	00111-84-2	0.68	2.74	1.872	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	2.64	18.726	
t-2-Pentene	00646-04-8	10.47	2.62	27.487	
2,3,5-Trimethylhexane	01069-53-0	1.12	2.52	2.818	
2,4-Dimethylhexane	00589-43-5	1.61	2.47	3.970	
Methylcyclopentane	00096-37-7	2.05	2.19	4.493	
Cyclohexane	00110-82-7	1.14	2.11	2.394	
Ethylbenzene	00100-41-4	2.96	2.10	6.233	
t-2-Hexene	04050-45-7	8.55	1.82	15.585	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	1.74	20.334	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.64	1.786	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	1.63	2.611	
n-Pentane	00109-66-0	1.21	1.60	1.946	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.54	1.465	
2-Methylheptane	00592-27-8	0.97	1.39	1.340	
2,3-Dimethylpentane	00565-59-3	1.25	1.35	1.687	
2-Methyl-2-pentene	00625-27-4	11.03	1.30	14.366	

Vehicle 208b - Fuel 10 psi E10 - Dynamic - Test 25744 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.22	3.888	
3-Methyl-t-2-pentene	00616-12-6	11.66	1.19	13.917	
c-2-Butene	00590-18-1	14.26	1.18	16.826	
3-Methyl-c-2-pentene	00922-62-3	12.52	1.15	14.398	
c-2-Pentene	00627-20-3	10.28	1.13	11.662	
2-Methyl-1-butene	00563-46-2	6.38	1.11	7.093	
n-Heptane	00142-82-5	0.97	1.02	0.987	
2-Methylhexane	00591-76-4	1.09	0.95	1.034	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.95	1.002	
Cyclopentene	00142-29-0	6.69	0.78	5.200	
2-Methyl-2-butene	00513-35-9	14.20	0.71	10.103	
2,4-Dimethylpentane	00108-08-7	1.46	0.11	0.162	
		Total	322.8	1369.5	4.242
No MIR available, use weighted average of 4.2422					

Vehicle 208b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7463

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	304.65	441.435	
n-Butane	00106-97-8	1.08	222.82	239.960	
Toluene	00108-88-3	3.93	203.31	798.007	
2-Methylbutane (Isopentane)	00078-78-4	1.35	151.53	205.313	
n-Hexane	00110-54-3	1.13	127.32	144.463	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	67.88	94.875	
3-Methylpentane	00096-14-0	1.69	49.21	83.206	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	48.37	58.050	
2-Methyl-2-butene	00513-35-9	14.20	45.52	646.141	
Benzene	00071-43-2	0.69	44.28	30.747	
n-Pentane	00109-66-0	1.21	40.33	48.994	
t-2-Pentene	00646-04-8	10.47	38.38	401.979	
Methylcyclopentane	00096-37-7	2.05	34.84	71.406	
Cyclohexane	00110-82-7	1.14	32.56	37.029	
2,3-Dimethylbutane	00079-29-8	0.90	26.99	24.254	
n-Propylbenzene	00103-65-1	1.96	21.68	42.492	
Methylcyclohexane	00108-87-2	1.56	21.43	33.332	
2,3,4-Trimethylpentane	00565-75-3	0.95	21.05	19.972	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	20.11	155.988	
n-Heptane	00142-82-5	0.97	20.08	19.391	
c-2-Pentene	00627-20-3	10.28	19.50	200.531	
2-Methylhexane	00591-76-4	1.09	19.22	20.858	
2-Methyl-1-butene	00563-46-2	6.38	18.36	117.083	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	17.73	56.577	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	16.26	87.281	
2,4-Dimethylpentane	00108-08-7	1.46	14.54	21.214	
t-2-Hexene	04050-45-7	8.55	12.79	109.358	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	11.98	140.179	
n-Octane	00111-65-9	0.80	10.30	8.203	
2,3-Dimethylpentane	00565-59-3	1.25	10.15	12.665	
2,4-Dimethylhexane	00589-43-5	1.61	9.90	15.898	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	9.78	51.836	
3-Methyl-t-2-pentene	00616-12-6	11.66	9.52	111.028	
1-Methylcyclopentene	00693-89-0	12.45	8.82	109.908	
3-Methyl-c-2-pentene	00922-62-3	12.52	8.70	108.885	
2-Methyl-2-pentene	00625-27-4	11.03	7.77	85.668	
c-2-Butene	00590-18-1	14.26	7.76	110.587	
Cyclopentene	00142-29-0	6.69	7.56	50.547	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	7.19	11.539	
2,2,5-Trimethylhexane	03522-94-9	1.05	7.05	7.428	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	6.97	46.030	
1,3,5-Trimethylbenzene	00108-67-8	11.75	6.90	81.131	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	6.69	29.395	
ortho-Xylene	00095-47-6	7.58	6.06	45.874	

Vehicle 208b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7463 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	6.04	33.447	
2,2-DiMeHexane	00590-73-8	0.94	5.82	5.476	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	5.58	6.095	
2-Methylheptane	00592-27-8	0.97	5.35	5.177	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	5.30	42.092	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	4.84	35.784	
3-Methylheptane	00589-81-1	1.12	4.34	4.885	
t-1,2-Dimethylcyclopentane	00822-50-4	2.93	4.26	12.501	
Ethylbenzene	00100-41-4	2.96	4.03	11.926	
c-1,3-Dimethylcyclohexane	00638-04-0	2.93	3.64	10.664	
c-1,3-Dimethylcyclopentane	02532-58-3	2.93	3.42	10.033	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	3.34	19.320	
n-Nonane	00111-84-2	0.68	3.07	2.099	
2,2-Dimethylpentane	00590-35-2	1.04	3.03	3.159	
2,2-Dimethylbutane	00075-83-2	1.11	2.92	3.248	
Unknown #16		2.93	2.90	8.514	
3,3-Dimethylpentane	00562-49-2	1.12	2.57	2.870	
1,2,3-Trimethylbenzene	00526-73-8	11.94	2.40	28.710	
n-Decane	00124-18-5	0.59	2.35	1.391	
Ethylcyclohexane	01678-91-7	1.35	2.00	2.687	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.88	1.980	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	1.85	14.502	
4-Methyloctane	02216-34-4	0.85	1.74	1.474	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	1.62	6.275	
1,4-Diethylbenzene	00105-05-5	4.39	1.56	6.852	
t-1,4-Dimethylcyclohexane	02207-04-7	2.93	1.52	4.444	
Indan	00496-11-7	3.23	1.39	4.500	
3,3-Dimethylhexane	00563-16-6	1.15	1.27	1.464	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.26	1.414	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	1.25	8.853	
Unknown #8		2.93	1.25	3.659	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.93	1.24	3.644	
Unknown #5		2.93	1.22	3.565	
c-2-Heptene	06443-92-1	7.08	1.20	8.479	
3-Methyloctane	02216-33-3	0.88	1.11	0.979	
Unknown #13		2.93	1.07	3.130	
3,5-Dimethylheptane	00926-82-9	1.42	1.05	1.494	
1,1-Dimethylcyclohexane	00590-66-9	1.12	0.92	1.027	
Isopropylbenzene (Cumene)	00098-82-8	2.93	0.89	2.597	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	0.88	1.044	
1,3-Butadiene	00106-99-0	12.45	0.84	10.453	
2,4-Dimethylheptane	02213-23-2	1.26	0.79	1.004	

Vehicle 208b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7463 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
t-3-Heptene	14686-14-7	6.17	0.79	4.845	
sec-Butylbenzene	00135-98-8	2.29	0.73	1.683	
1-Nonene	00124-11-8	2.49	0.70	1.755	
2,2-Dimethyloctane	15869-87-1	0.76	0.70	0.532	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.57	6.012	
1,3-Diethylbenzene	00141-93-5	7.08	0.57	4.028	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	0.55	3.571	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.52	3.891	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.51	4.271	
Isobutylbenzene	00538-93-2	2.93	0.50	1.477	
1-Heptene	00592-76-7	4.29	0.49	2.099	
Unknown #9		2.93	0.47	1.382	
t-2-Nonene	06434-78-2	2.93	0.47	1.372	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.41	3.270	
c- & t-4-Nonene	02198-23-4	4.42	0.39	1.703	
Unknown #15		2.93	0.38	1.113	
Unknown #3		2.93	0.35	1.025	
Unknown #14		2.93	0.35	1.017	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.34	1.295	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	0.31	0.267	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	0.24	2.389	
		Total	1919.2	5628.6	2.933
No MIR available, use weighted average of 2.9328					

Vehicle 208b - Fuel 7 psi E10 - 86°F Static - Test 7466

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	13.42	19.440	
Toluene	00108-88-3	3.93	12.66	49.684	
2-Methylbutane (Isopentane)	00078-78-4	1.35	5.73	7.768	
n-Butane	00106-97-8	1.08	4.23	4.558	
n-Pentane	00109-66-0	1.21	1.94	2.362	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	1.44	10.670	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.27	1.777	
2,4-Dimethylpentane	00108-08-7	1.46	1.10	1.611	
2,3-Dimethylbutane	00079-29-8	0.90	1.00	0.899	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	0.90	1.080	
Unknown #16		2.62	0.57	1.507	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.57	0.540	
n-Decane	00124-18-5	0.59	0.54	0.317	
n-Hexane	00110-54-3	1.13	0.52	0.591	
c-2-Butene	00590-18-1	14.26	0.52	7.382	
3-Methylpentane	00096-14-0	1.69	0.45	0.768	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.39	4.539	
t-2-Pentene	00646-04-8	10.47	0.38	3.958	
2-Methylhexane	00591-76-4	1.09	0.36	0.387	
Indan	00496-11-7	3.23	0.32	1.041	
2,4-Dimethylhexane	00589-43-5	1.61	0.32	0.515	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.31	1.203	
2,3-Dimethylpentane	00565-59-3	1.25	0.28	0.350	
Methylcyclopentane	00096-37-7	2.05	0.28	0.574	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.27	0.282	
t-1,2-Dimethylcyclopentane	00822-50-4	2.62	0.27	0.696	
2-Methyl-2-butene	00513-35-9	14.20	0.24	3.374	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.22	2.571	
2-Methyl-1-butene	00563-46-2	6.38	0.21	1.355	
3-Methylheptane	00589-81-1	1.12	0.20	0.220	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.19	0.209	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.18	0.777	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.17	1.190	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.10	0.640	
Cyclopentene	00142-29-0	6.69	0.09	0.619	
2,2-Dimethylbutane	00075-83-2	1.11	0.08	0.092	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.06	0.072	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.05	0.083	
c-2-Pentene	00627-20-3	10.28	0.03	0.315	
ortho-Xylene	00095-47-6	7.58	0.00	0.018	
		Total	51.9	136.0	2.623

No MIR available, use weighted average of 2.6226

Vehicle 208b - Fuel 7 psi E10 - 105°F Static - Test 7480					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	18.17	26.321	
Toluene	00108-88-3	3.93	15.73	61.725	
n-Hexane	00110-54-3	1.13	6.45	7.317	
2-Methylbutane (Isopentane)	00078-78-4	1.35	5.34	7.233	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	3.62	5.056	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	3.34	24.682	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	2.99	16.036	
n-Butane	00106-97-8	1.08	2.46	2.653	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	2.25	2.693	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	2.15	16.664	
2-Methyl-2-butene	00513-35-9	14.20	2.05	29.124	
3-Methylpentane	00096-14-0	1.69	1.99	3.370	
Methylcyclopentane	00096-37-7	2.05	1.92	3.928	
t-2-Pentene	00646-04-8	10.47	1.85	19.379	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.82	21.352	
n-Pentane	00109-66-0	1.21	1.77	2.153	
Benzene	00071-43-2	0.69	1.70	1.178	
2-Methylpropane	00075-28-5	1.18	1.58	1.861	
Cyclohexane	00110-82-7	1.14	1.48	1.687	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.41	6.191	
Unknown #16		3.57	1.38	4.935	
2-Methylhexane	00591-76-4	1.09	1.34	1.449	
2,3-Dimethylbutane	00079-29-8	0.90	1.33	1.199	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.14	6.292	
Methylcyclohexane	00108-87-2	1.56	1.07	1.661	
1-Methylcyclopentene	00693-89-0	12.45	0.99	12.341	
2,4-Dimethylpentane	00108-08-7	1.46	0.94	1.373	
t-1,2-Dimethylcyclopentane	00822-50-4	3.57	0.92	3.274	
2-Methyl-1-butene	00563-46-2	6.38	0.88	5.614	
ortho-Xylene	00095-47-6	7.58	0.84	6.374	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.80	0.891	
c-1,3-Dimethylcyclohexane	00638-04-0	3.57	0.79	2.834	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.73	0.690	
c-2-Pentene	00627-20-3	10.28	0.72	7.413	
n-Heptane	00142-82-5	0.97	0.69	0.665	
t-2-Hexene	04050-45-7	8.55	0.68	5.813	
3-Methylheptane	00589-81-1	1.12	0.64	0.720	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.62	7.437	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.58	1.862	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.58	6.822	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.58	0.629	
2-Methylheptane	00592-27-8	0.97	0.55	0.536	
4-Methyloctane	02216-34-4	0.85	0.53	0.450	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.52	3.403	

Vehicle 208b - Fuel 7 psi E10 - 105°F Static - Test 7480 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
c-2-Butene	00590-18-1	14.26	0.51	7.328	
2,3-Dimethylpentane	00565-59-3	1.25	0.50	0.630	
2,2-Dimethylpentane	00590-35-2	1.04	0.48	0.499	
Unknown #18		3.57	0.47	1.664	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.46	5.406	
2-Methyl-2-pentene	00625-27-4	11.03	0.42	4.603	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	0.41	2.389	
n-Octane	00111-65-9	0.80	0.40	0.322	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.39	0.634	
Isopropylbenzene (Cumene)	00098-82-8	3.57	0.38	1.368	
1,4-Diethylbenzene	00105-05-5	4.39	0.38	1.657	
n-Propylbenzene	00103-65-1	1.96	0.37	0.730	
n-Decane	00124-18-5	0.59	0.37	0.220	
Indan	00496-11-7	3.23	0.35	1.130	
Cyclopentene	00142-29-0	6.69	0.33	2.238	
2,2-DiMeHexane	00590-73-8	0.94	0.33	0.314	
c-1,3-Dimethylcyclopentane	02532-58-3	3.57	0.32	1.141	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.31	1.186	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.30	0.311	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.29	2.183	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.28	1.474	
t-1,4-Dimethylcyclohexane	02207-04-7	3.57	0.25	0.907	
Unknown #1		3.57	0.24	0.852	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.23	0.875	
3,3-Dimethyl-1-butene	00558-37-2	5.68	0.20	1.115	
Ethylbenzene	00100-41-4	2.96	0.20	0.579	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.18	1.836	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.17	1.302	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.13	1.041	
2,4-Dimethylhexane	00589-43-5	1.61	0.10	0.156	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.08	0.539	
2,2-Dimethylbutane	00075-83-2	1.11	0.02	0.024	
		Total	109.7	391.9	3.572
No MIR available, use weighted average of 3.5716					

Vehicle 208b - Fuel 7 psi E10 - Dynamic - Test 25759					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	44.29	47.694	
Toluene	00108-88-3	3.93	40.01	157.028	
Ethanol	00064-17-5	1.45	31.03	44.959	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	29.45	217.541	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	18.29	98.224	
2-Methylbutane (Isopentane)	00078-78-4	1.35	15.90	21.542	
n-Hexane	00110-54-3	1.13	13.82	15.678	
Benzene	00071-43-2	0.69	10.84	7.524	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	9.61	42.209	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	8.62	66.887	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	8.37	98.005	
1,3,5-Trimethylbenzene	00108-67-8	11.75	8.19	96.312	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	7.91	11.057	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	7.39	40.969	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	7.01	8.406	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	6.29	49.968	
2-Methyl-2-butene	00513-35-9	14.20	5.96	84.605	
3-Methylpentane	00096-14-0	1.69	5.74	9.698	
n-Pentane	00109-66-0	1.21	5.51	6.698	
2,3,3-Trimethylpentane	00560-21-4	0.95	5.46	5.168	
2,3-Dimethylbutane	00079-29-8	0.90	5.31	4.771	
n-Decane	00124-18-5	0.59	5.12	3.023	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	4.79	37.502	
Cyclohexane	00110-82-7	1.14	4.17	4.739	
Ethylbenzene	00100-41-4	2.96	4.06	12.017	
Methylcyclopentane	00096-37-7	2.05	3.85	7.900	
t-2-Pentene	00646-04-8	10.47	3.84	40.194	
Cyclopentene	00142-29-0	6.69	3.69	24.647	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	3.67	23.104	
Unknown #23		4.20	3.63	15.257	
c-2-Pentene	00627-20-3	10.28	3.60	37.032	
4-Isopropyltoluene (p-Cymene)	00099-87-6	4.41	3.53	15.550	
n-Propylbenzene	00103-65-1	1.96	3.49	6.849	
2-Methyl-1-butene	00563-46-2	6.38	3.49	22.291	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	3.44	10.991	
1,3-Butadiene	00106-99-0	12.45	3.15	39.249	
c-2-Butene	00590-18-1	14.26	3.08	43.992	
ortho-Xylene	00095-47-6	7.58	3.03	22.950	
2,4-Dimethylhexane	00589-43-5	1.61	2.76	4.427	
3-Methyl-c-2-pentene	00922-62-3	12.52	2.67	33.377	
Unknown #16		4.20	2.52	10.589	
n-Octane	00111-65-9	0.80	2.39	1.907	
Ethane	00074-84-0	0.26	2.39	0.628	
t-2-Hexene	04050-45-7	8.55	2.15	18.343	

Vehicle 208b - Fuel 7 psi E10 - Dynamic - Test 25759 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylhexane	00591-76-4	1.09	2.08	2.261	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	2.08	14.750	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	2.03	3.261	
1-Octene	00111-66-0	3.14	1.97	6.182	
3-Methylheptane	00589-81-1	1.12	1.74	1.959	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	1.65	8.720	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	1.59	6.140	
3-Methyl-t-2-pentene	00616-12-6	11.66	1.56	18.216	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.52	1.704	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.46	1.593	
Indan	00496-11-7	3.23	1.41	4.569	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	1.37	9.083	
2,3-Dimethylpentane	00565-59-3	1.25	1.32	1.646	
2-Methyl-2-pentene	00625-27-4	11.03	1.31	14.479	
2,2-DiMeHexane	00590-73-8	0.94	1.26	1.190	
1-Methyl-2-Propylbenzene	01074-17-5	5.43	1.17	6.364	
c-2-Heptene	06443-92-1	7.08	1.16	8.215	
n-Nonane	00111-84-2	0.68	1.16	0.791	
2-Methyl-1,3-butadiene	00078-79-5	10.48	1.15	12.008	
4-Methyloctane	02216-34-4	0.85	1.03	0.871	
2,2-Dimethylbutane	00075-83-2	1.11	0.97	1.073	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	0.94	1.108	
1,3-Dimethyl-4-Ethylbenzene	00874-41-9	7.54	0.84	6.332	
t-1,2-Dimethylcyclopentane	00822-50-4	4.20	0.84	3.506	
Unknown #18		4.20	0.79	3.313	
1,3-Diethylbenzene	00141-93-5	7.08	0.57	4.023	
Cyclopentadiene	00542-92-7	6.89	0.53	3.622	
2,2-Dimethylpentane	00590-35-2	1.04	0.40	0.421	
		Total	409.4	1718.9	4.198
No MIR available, use weighted average of 4.1985					

Vehicle 208b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7489					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	272.11	394.281	
Toluene	00108-88-3	3.93	180.22	707.380	
2-Methylbutane (Isopentane)	00078-78-4	1.35	131.81	178.590	
n-Hexane	00110-54-3	1.13	115.21	130.730	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	59.52	83.203	
Benzene	00071-43-2	0.69	47.52	32.995	
3-Methylpentane	00096-14-0	1.69	43.72	73.931	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	43.69	52.394	
2-Methyl-2-butene	00513-35-9	14.20	40.42	573.824	
n-Pentane	00109-66-0	1.21	36.90	44.826	
t-2-Pentene	00646-04-8	10.47	35.21	368.761	
n-Butane	00106-97-8	1.08	34.54	37.199	
Methylcyclopentane	00096-37-7	2.05	31.08	63.707	
Cyclohexane	00110-82-7	1.14	29.67	33.748	
2,3-Dimethylbutane	00079-29-8	0.90	23.40	21.034	
2,3,3-Trimethylpentane	00560-21-4	0.95	20.16	19.061	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	19.18	120.861	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	18.65	144.643	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	18.28	143.250	
c-2-Pentene	00627-20-3	10.28	17.84	183.408	
2-Methylhexane	00591-76-4	1.09	17.45	18.938	
2-Methyl-1-butene	00563-46-2	6.38	16.93	108.012	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	15.35	48.985	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	14.64	108.113	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	13.76	73.861	
2,4-Dimethylpentane	00108-08-7	1.46	12.81	18.699	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	11.54	135.123	
t-2-Hexene	04050-45-7	8.55	11.24	96.084	
n-Octane	00111-65-9	0.80	9.92	7.899	
2,4-Dimethylhexane	00589-43-5	1.61	9.52	15.290	
2,3-Dimethylpentane	00565-59-3	1.25	9.08	11.339	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	8.60	45.544	
3-Methyl-c-2-pentene	00922-62-3	12.52	8.60	107.599	
3-Methyl-t-2-pentene	00616-12-6	11.66	8.35	97.416	
c-2-Butene	00590-18-1	14.26	7.37	105.100	
1-Octene	00111-66-0	3.14	7.22	22.695	
2-Methyl-2-pentene	00625-27-4	11.03	7.10	78.373	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	7.01	11.248	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	6.56	43.336	
Cyclopentene	00142-29-0	6.69	6.46	43.182	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	5.78	45.866	
ortho-Xylene	00095-47-6	7.58	5.45	41.303	
1,3,5-Trimethylbenzene	00108-67-8	11.75	5.41	63.568	
2,3,5-Trimethylhexane	01069-53-0	1.12	5.38	6.030	

Vehicle 208b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7489 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	5.34	23.450	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	5.19	5.670	
2,2-DiMeHexane	00590-73-8	0.94	4.77	4.492	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	4.67	25.903	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	4.58	17.712	
2-Methylpropane	00075-28-5	1.18	4.38	5.158	
3-Methylheptane	00589-81-1	1.12	4.17	4.688	
t-1,2-Dimethylcyclopentane	00822-50-4	3.28	3.69	12.089	
t-1,4-Dimethylcyclohexane	02207-04-7	3.28	3.40	11.162	
n-Propylbenzene	00103-65-1	1.96	3.17	6.214	
Ethylbenzene	00100-41-4	2.96	3.12	9.246	
1,2,3-Trimethylbenzene	00526-73-8	11.94	3.12	37.225	
2,2-Dimethylpentane	00590-35-2	1.04	2.84	2.965	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	2.79	16.094	
c-1,3-Dimethylcyclopentane	02532-58-3	3.28	2.58	8.449	
2,2-Dimethylbutane	00075-83-2	1.11	2.52	2.800	
n-Nonane	00111-84-2	0.68	2.45	1.671	
Unknown #16		3.28	2.25	7.379	
4-Methyloctane	02216-34-4	0.85	2.03	1.718	
3,5-Dimethylheptane	00926-82-9	1.42	2.00	2.852	
3,3-Dimethylpentane	00562-49-2	1.12	1.97	2.206	
n-Decane	00124-18-5	0.59	1.90	1.125	
Ethylene	00074-85-1	8.88	1.59	14.130	
Ethane	00074-84-0	0.26	1.50	0.395	
Unknown #13		3.28	1.46	4.783	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.39	1.470	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	1.26	8.930	
Unknown #5		3.28	1.24	4.074	
Indan	00496-11-7	3.23	1.12	3.633	
3-Methyloctane	02216-33-3	0.88	1.00	0.883	
Unknown #8		3.28	0.97	3.192	
1,1-Dimethylcyclohexane	00590-66-9	1.12	0.97	1.079	
1,3-Butadiene	00106-99-0	12.45	0.95	11.892	
1-Nonene	00124-11-8	2.49	0.93	2.313	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	3.28	0.92	3.015	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	0.90	0.767	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	0.86	1.021	
3,3-Dimethylhexane	00563-16-6	1.15	0.85	0.984	
t-4-Octene	14850-23-8	4.69	0.76	3.555	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.75	7.901	
2,4-Dimethylheptane	02213-23-2	1.26	0.74	0.939	
c-2-Heptene	06443-92-1	7.08	0.74	5.252	

Vehicle 208b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7489 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1,3-Diethylbenzene	00141-93-5	7.08	0.72	5.097	
Unknown #9		3.28	0.65	2.116	
t-3-Heptene	14686-14-7	6.17	0.62	3.853	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	0.61	3.986	
t-2-Nonene	06434-78-2	3.28	0.61	1.993	
Isopropylbenzene (Cumene)	00098-82-8	3.28	0.59	1.950	
1-Methyl-2-Propylbenzene	01074-17-5	5.43	0.59	3.198	
sec-Butylbenzene	00135-98-8	2.29	0.56	1.281	
1,4-Diethylbenzene	00105-05-5	4.39	0.50	2.190	
Unknown #14		3.28	0.49	1.613	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.45	1.734	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.43	3.493	
Unknown #3		3.28	0.43	1.408	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.38	3.215	
1-Heptene	00592-76-7	4.29	0.37	1.580	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.37	0.348	
c- & t-4-Nonene	02198-23-4	4.42	0.33	1.465	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	0.32	2.411	
Isobutylbenzene	00538-93-2	3.28	0.29	0.956	
1-Methylcyclopentene	00693-89-0	12.45	0.26	3.247	
3-Methylnonane	005911-04-6	0.66	0.23	0.149	
		Total	1554.4	5099.2	3.281
No MIR available, use weighted average of 3.2806					

Vehicle 208b - Fuel 9 psi E0 - 86°F Static - Test 7530

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	11.13	11.987	
Toluene	00108-88-3	3.93	10.03	39.373	
2-Methylbutane (Isopentane)	00078-78-4	1.35	7.82	10.589	
Cyclohexane	00110-82-7	1.14	7.12	8.097	
Ethanol	00064-17-5	1.45	4.65	6.745	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	4.56	33.649	
n-Hexane	00110-54-3	1.13	3.83	4.349	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	3.46	4.149	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	2.82	3.936	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	2.29	17.789	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	1.76	9.464	
Benzene	00071-43-2	0.69	1.75	1.215	
2,3-Dimethylbutane	00079-29-8	0.90	1.74	1.567	
3-Methylpentane	00096-14-0	1.69	1.72	2.901	
Methylcyclopentane	00096-37-7	2.05	1.66	3.403	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.46	1.387	
n-Pentane	00109-66-0	1.21	1.44	1.751	
2-Methyl-2-butene	00513-35-9	14.20	1.18	16.745	
2,4-Dimethylhexane	00589-43-5	1.61	1.16	1.864	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.09	6.016	
t-2-Pentene	00646-04-8	10.47	1.06	11.079	
2,4-Dimethylpentane	00108-08-7	1.46	0.89	1.305	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.89	0.933	
2-Methylhexane	00591-76-4	1.09	0.81	0.875	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.77	3.377	
t-2-Hexene	04050-45-7	8.55	0.76	6.477	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.74	8.746	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.66	8.273	
n-Propylbenzene	00103-65-1	1.96	0.65	1.271	
2,3-Dimethylpentane	00565-59-3	1.25	0.64	0.794	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.61	3.217	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.61	7.079	
Unknown #22		3.19	0.56	1.792	
2-Methyl-1-butene	00563-46-2	6.38	0.56	3.568	
Ethylbenzene	00100-41-4	2.96	0.55	1.628	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.52	6.262	
ortho-Xylene	00095-47-6	7.58	0.52	3.946	
n-Heptane	00142-82-5	0.97	0.50	0.482	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.49	5.688	
2-Methyl-2-pentene	00625-27-4	11.03	0.45	4.920	
Indan	00496-11-7	3.23	0.44	1.436	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.44	1.400	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.43	2.840	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.43	0.469	

Vehicle 208b - Fuel 9 psi E0 - 86°F Static - Test 7530 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.39	0.618	
3-Methylheptane	00589-81-1	1.12	0.38	0.427	
2-Methylheptane	00592-27-8	0.97	0.34	0.329	
c-2-Pentene	00627-20-3	10.28	0.31	3.189	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.30	2.403	
Cyclopentene	00142-29-0	6.69	0.29	1.942	
c-2-Butene	00590-18-1	14.26	0.26	3.711	
2,2-Dimethylbutane	00075-83-2	1.11	0.12	0.132	
		Total	90.0	287.6	3.195
No MIR available, use weighted average of 3.1946					

Vehicle 208b - Fuel 9 psi E0 - 105°F Static - Test 7532					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	15.66	61.452	
n-Butane	00106-97-8	1.08	11.72	12.625	
Cyclohexane	00110-82-7	1.14	9.05	10.291	
2-Methylbutane (Isopentane)	00078-78-4	1.35	8.80	11.921	
Ethanol	00064-17-5	1.45	8.28	11.996	
n-Hexane	00110-54-3	1.13	4.60	5.215	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	3.91	4.690	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	3.64	28.201	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	3.52	4.921	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	3.12	16.775	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	2.86	21.113	
Benzene	00071-43-2	0.69	2.49	1.726	
3-Methylpentane	00096-14-0	1.69	2.40	4.061	
2,3-Dimethylbutane	00079-29-8	0.90	2.00	1.800	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.83	1.733	
Methylcyclopentane	00096-37-7	2.05	1.80	3.680	
2-Methyl-2-butene	00513-35-9	14.20	1.69	24.058	
n-Pentane	00109-66-0	1.21	1.64	1.991	
t-2-Pentene	00646-04-8	10.47	1.47	15.391	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.31	5.735	
ortho-Xylene	00095-47-6	7.58	1.28	9.660	
2,4-Dimethylpentane	00108-08-7	1.46	1.19	1.744	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.06	12.427	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.98	5.183	
2,4-Dimethylhexane	00589-43-5	1.61	0.92	1.480	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.80	9.383	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.79	4.386	
2-Methylhexane	00591-76-4	1.09	0.78	0.847	
2,3-Dimethylpentane	00565-59-3	1.25	0.70	0.868	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.68	1.089	
Ethylbenzene	00100-41-4	2.96	0.67	1.986	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.67	2.135	
2-Methyl-1-butene	00563-46-2	6.38	0.66	4.208	
t-1,2-Dimethylcyclopentane	00822-50-4	3.21	0.66	2.105	
c-2-Pentene	00627-20-3	10.28	0.65	6.727	
2-Methylheptane	00592-27-8	0.97	0.64	0.622	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.63	7.474	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.62	4.125	
2,2-Dimethylbutane	00075-83-2	1.11	0.61	0.683	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.59	0.625	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.55	0.602	
t-2-Hexene	04050-45-7	8.55	0.54	4.582	
n-Propylbenzene	00103-65-1	1.96	0.54	1.049	
Cyclopentene	00142-29-0	6.69	0.49	3.274	

Vehicle 208b - Fuel 9 psi E0 - 105°F Static - Test 7532 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methyl-2-pentene	00625-27-4	11.03	0.48	5.339	
Methylcyclohexane	00108-87-2	1.56	0.48	0.744	
2,2-DiMeHexane	00590-73-8	0.94	0.48	0.449	
Unknown #16		3.21	0.46	1.472	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.45	5.667	
1-Methylcyclopentene	00693-89-0	12.45	0.45	5.568	
3-Methylheptane	00589-81-1	1.12	0.43	0.480	
c-2-Butene	00590-18-1	14.26	0.42	6.040	
n-Octane	00111-65-9	0.80	0.42	0.331	
n-Heptane	00142-82-5	0.97	0.39	0.376	
c-1,3-Dimethylcyclopentane	02532-58-3	3.21	0.33	1.051	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.33	2.591	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.32	2.270	
n-Nonane	00111-84-2	0.68	0.24	0.165	
2,4-Dimethylheptane	02213-23-2	1.26	0.21	0.266	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.05	0.607	
		Total	115.4	370.1	3.207
No MIR available, use weighted average of 3.2066					

Vehicle 208b - Fuel 9 psi E0 - Dynamic - Test 25771					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	49.24	193.287	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	28.61	211.333	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	24.19	129.907	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	23.46	181.972	
n-Hexane	00110-54-3	1.13	22.68	25.733	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	19.89	23.856	
Cyclohexane	00110-82-7	1.14	19.72	22.424	
3-Me-1-Hexene	03404-61-3	4.27	13.55	57.915	
1,3,5-Trimethylbenzene	00108-67-8	11.75	12.44	146.274	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	10.63	46.701	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	9.20	12.855	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	9.20	53.133	
Benzene	00071-43-2	0.69	9.16	6.362	
2,3,4-Trimethylpentane	00565-75-3	0.95	8.61	8.171	
3-Methylpentane	00096-14-0	1.69	8.01	13.547	
ortho-Xylene	00095-47-6	7.58	6.97	52.783	
n-Pentane	00109-66-0	1.21	6.76	8.212	
Methylcyclopentane	00096-37-7	2.05	6.65	13.629	
2-Methylhexane	00591-76-4	1.09	6.57	7.132	
n-Heptane	00142-82-5	0.97	6.43	6.208	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	5.90	32.693	
1-Methylcyclopentene	00693-89-0	12.45	5.55	69.091	
2,3-Dimethylbutane	00079-29-8	0.90	5.47	4.916	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	5.09	16.242	
4-Methyl-t-2-pentene	00674-76-0	8.04	4.94	39.753	
Ethylbenzene	00100-41-4	2.96	4.88	14.467	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	4.78	37.998	
Unknown #22		4.52	4.76	21.530	
2,2,5-Trimethylhexane	03522-94-9	1.05	4.54	4.777	
2-Methyl-2-butene	00513-35-9	14.20	4.45	63.114	
n-Butane	00106-97-8	1.08	4.42	4.764	
2-Methylbutane (Isopentane)	00078-78-4	1.35	3.73	5.048	
Indan	00496-11-7	3.23	3.59	11.626	
n-Propylbenzene	00103-65-1	1.96	3.56	6.975	
2,4-Dimethylpentane	00108-08-7	1.46	3.33	4.858	
1,2,3-Trimethylbenzene	00526-73-8	11.94	3.32	39.635	
2-Methyl-1,3-butadiene	00078-79-5	10.48	3.10	32.468	
3-Methyl-t-2-pentene	00616-12-6	11.66	3.05	35.574	
2,3-Dimethylpentane	00565-59-3	1.25	2.92	3.646	
t-2-Pentene	00646-04-8	10.47	2.91	30.439	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	2.84	33.293	
2,4-Dimethylhexane	00589-43-5	1.61	2.68	4.305	
2,2-Dimethylpentane	00590-35-2	1.04	2.58	2.688	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	2.45	2.673	

Vehicle 208b - Fuel 9 psi E0 - Dynamic - Test 25771 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
t-2-Hexene	04050-45-7	8.55	2.10	17.988	
2,3,5-Trimethylhexane	01069-53-0	1.12	2.01	2.248	
2-Methyl-1-butene	00563-46-2	6.38	1.91	12.174	
c-2-Pentene	00627-20-3	10.28	1.80	18.508	
1,3-Butadiene	00106-99-0	12.45	1.49	18.584	
c-2-Butene	00590-18-1	14.26	1.47	21.026	
Cyclopentene	00142-29-0	6.69	1.14	7.607	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.88	11.062	
		Total	409.6	1853.2	4.524
No MIR available, use weighted average of 4.5241					

Vehicle 208b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7556					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	226.83	307.323	
n-Butane	00106-97-8	1.08	223.98	241.202	
Cyclohexane	00110-82-7	1.14	192.86	219.354	
Toluene	00108-88-3	3.93	167.30	656.673	
n-Hexane	00110-54-3	1.13	94.18	106.869	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	82.44	98.861	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	72.60	101.472	
3-Methylpentane	00096-14-0	1.69	49.77	84.157	
2,3-Dimethylbutane	00079-29-8	0.90	35.98	32.338	
2,3,4-Trimethylpentane	00565-75-3	0.95	34.51	32.747	
n-Pentane	00109-66-0	1.21	34.15	41.485	
2-Methyl-2-butene	00513-35-9	14.20	33.96	481.993	
Methylcyclopentane	00096-37-7	2.05	33.50	68.663	
Benzene	00071-43-2	0.69	32.27	22.407	
Ethanol	00064-17-5	1.45	30.56	44.275	
t-2-Pentene	00646-04-8	10.47	26.47	277.198	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	20.03	155.313	
2,4-Dimethylpentane	00108-08-7	1.46	19.99	29.167	
2-Methylhexane	00591-76-4	1.09	17.93	19.453	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	16.52	52.723	
2,3-Dimethylpentane	00565-59-3	1.25	15.96	19.917	
2,4-Dimethylhexane	00589-43-5	1.61	15.36	24.658	
2,2,5-Trimethylhexane	03522-94-9	1.05	13.89	14.624	
c-2-Pentene	00627-20-3	10.28	13.64	140.198	
2-Methyl-1-butene	00563-46-2	6.38	12.87	82.116	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	11.31	18.150	
t-2-Hexene	04050-45-7	8.55	10.72	91.658	
3-Methyl-t-2-pentene	00616-12-6	11.66	9.78	114.064	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	8.94	104.661	
n-Heptane	00142-82-5	0.97	8.88	8.578	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	8.85	46.887	
3-Methyl-c-2-pentene	00922-62-3	12.52	8.64	108.144	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	8.04	8.777	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	7.97	42.775	
2,3,5-Trimethylhexane	01069-53-0	1.12	7.52	8.424	
1-Methylcyclopentene	00693-89-0	12.45	6.91	86.056	
2-Methyl-2-pentene	00625-27-4	11.03	6.89	75.985	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	5.99	39.576	
2,2-Dimethylbutane	00075-83-2	1.11	5.76	6.402	
ortho-Xylene	00095-47-6	7.58	5.74	43.500	
Cyclopentene	00142-29-0	6.69	5.74	38.349	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	5.33	39.403	
Methylcyclohexane	00108-87-2	1.56	5.14	7.996	
c-2-Butene	00590-18-1	14.26	4.32	61.588	

Vehicle 208b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7556

Non Zero Mass Species Sorted By VOC **continued**

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
t-1,2-Dimethylcyclopentane	00822-50-4	2.65	4.26	11.303	
Ethylbenzene	00100-41-4	2.96	4.04	11.966	
2,2-DiMeHexane	00590-73-8	0.94	4.03	3.795	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	3.66	16.090	
1,3,5-Trimethylbenzene	00108-67-8	11.75	3.51	41.294	
c-1,3-Dimethylcyclopentane	02532-58-3	2.65	3.46	9.164	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	3.43	27.267	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	2.78	16.057	
2,2-Dimethylpentane	00590-35-2	1.04	2.71	2.826	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	2.64	14.650	
2-Methylheptane	00592-27-8	0.97	2.64	2.556	
3-Methylheptane	00589-81-1	1.12	2.47	2.775	
n-Propylbenzene	00103-65-1	1.96	2.32	4.556	
n-Octane	00111-65-9	0.80	2.26	1.796	
Ethylene	00074-85-1	8.88	2.22	19.715	
Unknown #16		2.65	2.05	5.438	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	2.05	16.040	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.80	1.896	
Unknown #5		2.65	1.75	4.627	
3,5-Dimethylheptane	00926-82-9	1.42	1.58	2.252	
3,3-Dimethylpentane	00562-49-2	1.12	1.50	1.677	
Unknown #13		2.65	1.44	3.829	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	1.39	5.303	
Indan	00496-11-7	3.23	1.14	3.694	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	1.01	3.894	
1-Nonene	00124-11-8	2.49	1.00	2.500	
c-2-Heptene	06443-92-1	7.08	0.95	6.717	
1,3-Diethylbenzene	00141-93-5	7.08	0.90	6.400	
1,3-Butadiene	00106-99-0	12.45	0.90	11.231	
3,3-Dimethylhexane	00563-16-6	1.15	0.81	0.938	
4-Methyloctane	02216-34-4	0.85	0.73	0.615	
t-3-Heptene	14686-14-7	6.17	0.70	4.305	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	0.69	4.499	
c-1,3-Dimethylcyclohexane	00638-04-0	2.65	0.66	1.760	
2,4-Dimethylheptane	02213-23-2	1.26	0.66	0.839	
Isopropylbenzene (Cumene)	00098-82-8	2.65	0.61	1.623	
Unknown #8		2.65	0.59	1.575	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.54	5.671	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.65	0.54	1.433	
t-2-Nonene	06434-78-2	2.65	0.50	1.329	
Unknown #3		2.65	0.43	1.140	
1-Methyl-2-Propylbenzene	01074-17-5	5.43	0.43	2.325	

Vehicle 208b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7556 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.43	3.567	
n-Nonane	00111-84-2	0.68	0.41	0.283	
1-Heptene	00592-76-7	4.29	0.39	1.672	
3-Methyloctane	02216-33-3	0.88	0.36	0.318	
1,1-Dimethylcyclohexane	00590-66-9	1.12	0.32	0.352	
2,2-Dimethyloctane	15869-87-1	0.76	0.30	0.230	
1c-2t-3-TriMeCyPentane	15890-40-1	2.65	0.29	0.780	
sec-Butylbenzene	00135-98-8	2.29	0.29	0.658	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.28	1.746	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	0.27	0.232	
Isobutylbenzene	00538-93-2	2.65	0.25	0.651	
t-1,4-Dimethylcyclohexane	02207-04-7	2.65	0.18	0.483	
		Total	1737.6	4606.5	2.651
No MIR available, use weighted average of 2.6511					

Vehicle 208b - Fuel 7 psi E0 - 86°F Static - Test 7568

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	8.61	11.665	
Toluene	00108-88-3	3.93	5.61	22.020	
n-Butane	00106-97-8	1.08	5.20	5.598	
Cyclohexane	00110-82-7	1.14	3.19	3.630	
n-Hexane	00110-54-3	1.13	2.08	2.355	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.65	2.310	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.55	1.860	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	1.45	11.249	
n-Pentane	00109-66-0	1.21	1.44	1.755	
t-2-Pentene	00646-04-8	10.47	1.20	12.565	
3-Methylpentane	00096-14-0	1.69	1.19	2.005	
Benzene	00071-43-2	0.69	1.08	0.751	
Indan	00496-11-7	3.23	0.87	2.828	
c-2-Pentene	00627-20-3	10.28	0.84	8.640	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.81	0.767	
2,3-Dimethylbutane	00079-29-8	0.90	0.77	0.691	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	0.68	3.661	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.66	8.258	
Unknown #16		3.15	0.66	2.072	
2-Methyl-2-butene	00513-35-9	14.20	0.65	9.182	
Methylcyclopentane	00096-37-7	2.05	0.64	1.308	
1-Butyne	00107-00-6	6.05	0.60	3.611	
c-2-Butene	00590-18-1	14.26	0.51	7.330	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.50	0.561	
2,4-Dimethylhexane	00589-43-5	1.61	0.47	0.754	
Isopropylbenzene (Cumene)	00098-82-8	3.15	0.45	1.402	
2,3-Dimethylpentane	00565-59-3	1.25	0.41	0.506	
2-Methylhexane	00591-76-4	1.09	0.40	0.434	
2,4-Dimethylpentane	00108-08-7	1.46	0.39	0.575	
t-2-Hexene	04050-45-7	8.55	0.39	3.347	
n-Octane	00111-65-9	0.80	0.38	0.302	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.34	1.819	
c-1,3-Dimethylcyclopentane	02532-58-3	3.15	0.33	1.029	
2-Methyl-1-butene	00563-46-2	6.38	0.33	2.081	
Ethanol	00064-17-5	1.45	0.31	0.446	
Ethylbenzene	00100-41-4	2.96	0.26	0.781	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.26	1.451	
ortho-Xylene	00095-47-6	7.58	0.25	1.859	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.24	0.258	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.24	2.752	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.23	0.377	
2,2-Dimethylbutane	00075-83-2	1.11	0.23	0.258	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.23	1.017	
2-Methyl-2-pentene	00625-27-4	11.03	0.23	2.485	

Vehicle 208b - Fuel 7 psi E0 - 86°F Static - Test 7568 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Propylbenzene	00103-65-1	1.96	0.22	0.426	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.21	2.496	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.21	1.382	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.21	0.664	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.19	0.207	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.18	1.300	
2-Methylheptane	00592-27-8	0.97	0.18	0.172	
3-Methylheptane	00589-81-1	1.12	0.17	0.188	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.10	0.815	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.06	0.727	
t-1,2-Dimethylcyclopentane	00822-50-4	3.15	0.06	0.182	
		Total	50.6	159.2	3.146
No MIR available, use weighted average of 3.1461					

Vehicle 208b - Fuel 7 psi E0 - 105°F Static - Test 7570					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	15.30	60.052	
2-Methylbutane (Isopentane)	00078-78-4	1.35	13.66	18.514	
Cyclohexane	00110-82-7	1.14	11.04	12.558	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	7.47	55.201	
n-Butane	00106-97-8	1.08	6.68	7.192	
n-Hexane	00110-54-3	1.13	4.95	5.616	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	4.44	5.321	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	3.72	5.196	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	3.56	27.572	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	2.77	14.863	
3-Methylpentane	00096-14-0	1.69	2.62	4.427	
Ethanol	00064-17-5	1.45	2.23	3.235	
Benzene	00071-43-2	0.69	2.21	1.532	
2,3,4-Trimethylpentane	00565-75-3	0.95	2.05	1.943	
2,3-Dimethylbutane	00079-29-8	0.90	1.97	1.766	
n-Pentane	00109-66-0	1.21	1.76	2.139	
2-Methyl-2-butene	00513-35-9	14.20	1.68	23.915	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.58	18.554	
Methylcyclopentane	00096-37-7	2.05	1.43	2.935	
t-2-Pentene	00646-04-8	10.47	1.40	14.676	
2-Methylhexane	00591-76-4	1.09	1.12	1.213	
2,4-Dimethylpentane	00108-08-7	1.46	1.10	1.608	
ortho-Xylene	00095-47-6	7.58	0.98	7.450	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.96	4.218	
2,4-Dimethylhexane	00589-43-5	1.61	0.93	1.501	
2,3-Dimethylpentane	00565-59-3	1.25	0.90	1.124	
Methylcyclohexane	00108-87-2	1.56	0.88	1.366	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.88	10.477	
2,2-DiMeHexane	00590-73-8	0.94	0.79	0.744	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.78	2.501	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.76	0.804	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.75	1.211	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.70	3.884	
t-2-Hexene	04050-45-7	8.55	0.69	5.899	
1-Butyne	00107-00-6	6.05	0.66	3.993	
n-Heptane	00142-82-5	0.97	0.65	0.630	
2-Methylheptane	00592-27-8	0.97	0.64	0.615	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.63	4.444	
c-2-Pentene	00627-20-3	10.28	0.59	6.104	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.58	3.079	
1-Methylcyclopentene	00693-89-0	12.45	0.57	7.067	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.57	0.618	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.57	3.736	
Ethylbenzene	00100-41-4	2.96	0.55	1.617	

Vehicle 208b - Fuel 7 psi E0 - 105°F Static - Test 7570 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methyl-1-butene	00563-46-2	6.38	0.53	3.377	
Indan	00496-11-7	3.23	0.51	1.649	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.48	5.975	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.48	5.566	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.44	5.191	
n-Undecane	01120-21-4	0.52	0.43	0.223	
c-2-Butene	00590-18-1	14.26	0.39	5.566	
2-Methyl-2-pentene	00625-27-4	11.03	0.37	4.064	
n-Octane	00111-65-9	0.80	0.37	0.292	
3-Methylheptane	00589-81-1	1.12	0.33	0.376	
2,2-Dimethylbutane	00075-83-2	1.11	0.30	0.335	
Unknown #22	.	3.45	0.26	0.899	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	0.24	1.815	
2,2-Dimethylpentane	00590-35-2	1.04	0.23	0.238	
t-1,2-Dimethylcyclopentane	00822-50-4	3.45	0.20	0.700	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.20	1.591	
Cyclopentene	00142-29-0	6.69	0.18	1.181	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.17	0.193	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.12	0.919	
		Total	117.0	403.3	3.448
No MIR available, use weighted average of 3.4476					

Vehicle 208b - Fuel 7 psi E0 - Dynamic - Test 25782 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Propylbenzene	00103-65-1	1.96	28.20	55.259	
Toluene	00108-88-3	3.93	13.03	51.131	
Cyclohexane	00110-82-7	1.14	10.16	11.555	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	7.81	41.960	
1,3,5-Trimethylbenzene	00108-67-8	11.75	4.84	56.854	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	4.82	37.344	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	4.71	5.652	
n-Butane	00106-97-8	1.08	3.05	3.281	
Ethane	00074-84-0	0.26	2.47	0.650	
ortho-Xylene	00095-47-6	7.58	2.26	17.147	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.03	8.899	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.79	9.903	
Benzene	00071-43-2	0.69	1.69	1.176	
2-Methylbutane (Isopentane)	00078-78-4	1.35	1.45	1.960	
2,3-Dimethylbutane	00079-29-8	0.90	1.27	1.139	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.25	1.742	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.20	1.138	
Methylcyclopentane	00096-37-7	2.05	1.09	2.237	
2,4-Dimethylpentane	00108-08-7	1.46	1.07	1.563	
3-Methylpentane	00096-14-0	1.69	1.01	1.707	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.00	11.947	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.96	1.008	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.76	7.932	
2,4-Dimethylhexane	00589-43-5	1.61	0.73	1.174	
2,2-Dimethylbutane	00075-83-2	1.11	0.66	0.738	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.63	1.006	
Ethylbenzene	00100-41-4	2.96	0.62	1.835	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.47	3.720	
2,3-Dimethylpentane	00565-59-3	1.25	0.41	0.508	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.40	2.113	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.33	0.357	
Cyclopentene	00142-29-0	6.69	0.29	1.967	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.23	2.692	
n-Heptane	00142-82-5	0.97	0.21	0.202	
2-Methyl-2-butene	00513-35-9	14.20	0.17	2.457	
Methylcyclohexane	00108-87-2	1.56	0.16	0.255	
2-Methylhexane	00591-76-4	1.09	0.13	0.139	
n-Undecane	01120-21-4	0.52	0.11	0.058	
c-2-Pentene	00627-20-3	10.28	0.11	1.112	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.02	0.068	
		Total	103.6	353.6	3.413

Vehicle 208b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7575					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	166.23	225.216	
Cyclohexane	00110-82-7	1.14	133.72	152.087	
Toluene	00108-88-3	3.93	125.86	494.015	
n-Butane	00106-97-8	1.08	74.60	80.336	
n-Hexane	00110-54-3	1.13	71.28	80.879	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	53.08	74.200	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	50.19	60.179	
3-Methylpentane	00096-14-0	1.69	35.73	60.417	
Benzene	00071-43-2	0.69	27.27	18.934	
2-Methyl-2-butene	00513-35-9	14.20	27.25	386.746	
n-Pentane	00109-66-0	1.21	26.97	32.769	
2,3-Dimethylbutane	00079-29-8	0.90	25.95	23.320	
Ethanol	00064-17-5	1.45	25.83	37.429	
Methylcyclopentane	00096-37-7	2.05	24.26	49.718	
t-2-Pentene	00646-04-8	10.47	22.05	230.932	
2,3,4-Trimethylpentane	00565-75-3	0.95	19.36	18.369	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	14.93	115.821	
2,4-Dimethylpentane	00108-08-7	1.46	13.76	20.080	
2-Methylhexane	00591-76-4	1.09	12.45	13.509	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	11.33	36.151	
c-2-Pentene	00627-20-3	10.28	10.95	112.570	
2,3-Dimethylpentane	00565-59-3	1.25	10.41	13.000	
2-Methyl-1-butene	00563-46-2	6.38	10.03	63.975	
2,4-Dimethylhexane	00589-43-5	1.61	9.09	14.597	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	8.94	66.052	
t-2-Hexene	04050-45-7	8.55	8.50	72.690	
3-Methyl-t-2-pentene	00616-12-6	11.66	7.46	86.970	
3-Methyl-c-2-pentene	00922-62-3	12.52	7.23	90.547	
2,2,5-Trimethylhexane	03522-94-9	1.05	7.23	7.615	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	6.82	36.159	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	6.81	10.940	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	6.72	78.603	
n-Heptane	00142-82-5	0.97	6.41	6.190	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	5.71	30.658	
1-Methylcyclopentene	00693-89-0	12.45	5.48	68.258	
2-Methyl-2-pentene	00625-27-4	11.03	5.30	58.508	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	4.99	5.451	
2,2-DiMeHexane	00590-73-8	0.94	4.84	4.552	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	4.82	31.813	
Cyclopentene	00142-29-0	6.69	4.58	30.623	
ortho-Xylene	00095-47-6	7.58	4.14	31.338	
2,2-Dimethylbutane	00075-83-2	1.11	3.56	3.954	
c-2-Butene	00590-18-1	14.26	3.49	49.718	
Methylcyclohexane	00108-87-2	1.56	3.31	5.155	

Vehicle 208b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7575 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethylbenzene	00100-41-4	2.96	3.14	9.307	
t-1,2-Dimethylcyclopentane	00822-50-4	2.91	2.98	8.649	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.65	11.642	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	2.49	19.786	
c-1,3-Dimethylcyclopentane	02532-58-3	2.91	2.32	6.754	
1,3,5-Trimethylbenzene	00108-67-8	11.75	2.19	25.686	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	2.09	12.090	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	2.00	11.087	
3-Methylheptane	00589-81-1	1.12	1.94	2.181	
n-Propylbenzene	00103-65-1	1.96	1.92	3.763	
2,2-Dimethylpentane	00590-35-2	1.04	1.87	1.955	
2-Methylheptane	00592-27-8	0.97	1.81	1.755	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	1.54	12.100	
n-Octane	00111-65-9	0.80	1.36	1.085	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.31	1.377	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.20	1.346	
3,3-Dimethylpentane	00562-49-2	1.12	1.12	1.258	
Unknown #16		2.91	1.11	3.235	
c-2-Heptene	06443-92-1	7.08	0.96	6.789	
Unknown #5		2.91	0.93	2.692	
1,3-Butadiene	00106-99-0	12.45	0.84	10.459	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.75	5.298	
n-Decane	00124-18-5	0.59	0.74	0.438	
1-Nonene	00124-11-8	2.49	0.67	1.671	
c-1,3-Dimethylcyclohexane	00638-04-0	2.91	0.66	1.929	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	0.65	4.264	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.65	7.748	
3,3-Dimethylhexane	00563-16-6	1.15	0.63	0.722	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.62	2.400	
Indan	00496-11-7	3.23	0.60	1.932	
t-3-Heptene	14686-14-7	6.17	0.56	3.482	
4-Methyloctane	02216-34-4	0.85	0.51	0.432	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.47	3.954	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.43	2.684	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.42	4.405	
t-2-Nonene	06434-78-2	2.91	0.39	1.140	
n-Nonane	00111-84-2	0.68	0.38	0.260	
1-Heptene	00592-76-7	4.29	0.36	1.540	
Unknown #8		2.91	0.33	0.949	
2,4-Dimethylheptane	02213-23-2	1.26	0.28	0.351	
Isopropylbenzene (Cumene)	00098-82-8	2.91	0.22	0.649	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	0.18	0.151	
		Total	1167.2	3392.4	2.906
No MIR available, use weighted average of 2.9065					

Vehicle 209b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7423	52.1	165.6	86.2	276.2	3.205	63
Static	E10 - 7 psi	7466	54.4	130.9	71.2	262.9	3.692	78
	E0 - 9 psi	7501	44.8	83.4	37.3	76.3	2.043	19
	E0 - 7 psi	7524	38.8	120.5	46.8	161.0	3.441	51
105° F	E10 - 10 psi	7424	160.9	117.8	189.4	593.2	3.131	65
Static	E10 - 7 psi	7467	102.4	98.8	101.2	340.7	3.368	57
	E0 - 9 psi	7504	55.8	86.1	48.1	186.9	3.886	52
	E0 - 7 psi	7527	62.4	101.5	63.3	245.8	3.885	50
Dynamic	E10 - 10 psi	25742	401.4	111.9	449.1	1629.8	3.629	74
	E10 - 7 psi	25755	217.1	85.1	184.7	701.1	3.796	58
	E0 - 9 psi	25761	140.9	102.9	145.0	658.3	4.541	45
	E0 - 7 psi	25768	166.6	87.9	146.4	543.1	3.708	31
DHB	E10 - 10 psi	7461	1434.5	93.8	1345.1	3821.9	2.841	110
Total	E10 - 7 psi	7472	1055.7	93.7	989.6	2879.4	2.909	89
	E0 - 9 psi	7508	802.6	59.6	478.6	1316.0	2.749	65
	E0 - 7 psi	7533	821.9	94.5	776.5	2515.6	3.239	81

Vehicle 209b - Fuel 10 psi E10 - 86°F Static - Test 7423					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	14.30	20.721	
Toluene	00108-88-3	3.93	10.09	39.602	
2-Methylbutane (Isopentane)	00078-78-4	1.35	8.82	11.956	
n-Butane	00106-97-8	1.08	8.71	9.383	
n-Propylbenzene	00103-65-1	1.96	3.96	7.758	
n-Hexane	00110-54-3	1.13	3.17	3.600	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	3.00	16.083	
Benzene	00071-43-2	0.69	2.16	1.498	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.76	2.462	
2-Methyl-2-butene	00513-35-9	14.20	1.46	20.779	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	1.46	11.302	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	1.39	10.247	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.30	1.559	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.24	6.850	
n-Pentane	00109-66-0	1.21	1.23	1.497	
3-Methylpentane	00096-14-0	1.69	1.23	2.081	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.19	5.209	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.09	12.824	
t-2-Pentene	00646-04-8	10.47	0.87	9.116	
Unknown #16		3.20	0.86	2.759	
Methylcyclohexane	00108-87-2	1.56	0.84	1.305	
2-Methylpropane	00075-28-5	1.18	0.83	0.976	
Methylcyclopentane	00096-37-7	2.05	0.82	1.673	
2,3-Dimethylbutane	00079-29-8	0.90	0.75	0.670	
Unknown #22	.	3.20	0.73	2.353	
Cyclohexane	00110-82-7	1.14	0.63	0.721	
ortho-Xylene	00095-47-6	7.58	0.61	4.652	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.58	7.318	
c-2-Pentene	00627-20-3	10.28	0.58	5.985	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.57	3.789	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.57	6.623	
t-2-Hexene	04050-45-7	8.55	0.56	4.809	
n-Octane	00111-65-9	0.80	0.55	0.441	
2-Methyl-1-butene	00563-46-2	6.38	0.53	3.389	
n-Decane	00124-18-5	0.59	0.52	0.306	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.51	0.482	
2-Methyl-2-pentene	00625-27-4	11.03	0.50	5.476	
2,2-DiMeHexane	00590-73-8	0.94	0.48	0.456	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.44	5.270	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.43	5.040	
c-2-Butene	00590-18-1	1.12	0.37	0.420	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.36	1.929	
c-1,3-Dimethylcyclohexane	00638-04-0	3.20	0.36	1.145	
t-2-Butene	00624-64-6	15.20	0.31	4.729	

Vehicle 209b - Fuel 10 psi E10 - 86°F Static - Test 7423 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Indan	00496-11-7	3.23	0.31	1.003	
Ethylbenzene	00100-41-4	2.96	0.30	0.882	
2,4-Dimethylpentane	00108-08-7	1.46	0.29	0.419	
2,2-Dimethylpentane	00590-35-2	1.04	0.29	0.299	
n-Heptane	00142-82-5	0.97	0.27	0.256	
Cyclopentene	00142-29-0	6.69	0.25	1.689	
t-1,2-Dimethylcyclopentane	00822-50-4	3.20	0.23	0.729	
2-Methylheptane	00592-27-8	0.97	0.21	0.207	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.17	1.346	
2,4-Dimethylhexane	00589-43-5	1.61	0.16	0.257	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.15	0.248	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.14	0.152	
n-Nonane	00111-84-2	0.68	0.14	0.097	
c-1,3-Dimethylcyclopentane	02532-58-3	3.20	0.13	0.407	
2-Methylhexane	00591-76-4	1.09	0.12	0.128	
2,2-Dimethylbutane	00075-83-2	1.11	0.10	0.116	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.08	0.584	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.05	0.050	
2,3-Dimethylpentane	00565-59-3	1.25	0.05	0.056	
		Total	86.2	276.2	3.205
No MIR available, use weighted average of 3.2047					

Vehicle 209b - Fuel 10 psi E10 - 105°F Static - Test 7424

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	36.10	38.874	
Ethanol	00064-17-5	1.45	27.85	40.352	
Toluene	00108-88-3	3.93	21.91	85.991	
2-Methylbutane (Isopentane)	00078-78-4	1.35	13.86	18.776	
n-Hexane	00110-54-3	1.13	6.99	7.932	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	4.75	25.498	
n-Propylbenzene	00103-65-1	1.96	4.23	8.287	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	3.93	5.492	
Benzene	00071-43-2	0.69	3.89	2.702	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	3.37	24.854	
2-Methyl-2-butene	00513-35-9	14.20	3.33	47.232	
t-2-Pentene	00646-04-8	10.47	3.27	34.277	
n-Pentane	00109-66-0	1.21	3.24	3.939	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	2.83	21.981	
3-Methylpentane	00096-14-0	1.69	2.77	4.687	
2-Methylpropane	00075-28-5	1.18	2.54	2.989	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	2.25	2.694	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.74	7.634	
Methylcyclopentane	00096-37-7	2.05	1.70	3.486	
n-Heptane	00142-82-5	0.97	1.66	1.605	
c-2-Pentene	00627-20-3	10.28	1.64	16.908	
Cyclohexane	00110-82-7	1.14	1.64	1.868	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.50	8.311	
t-2-Butene	00624-64-6	15.20	1.50	22.773	
2,3-Dimethylbutane	00079-29-8	0.90	1.44	1.290	
2-Methyl-1-butene	00563-46-2	6.38	1.42	9.061	
Propane	00074-98-6	0.46	1.33	0.608	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.31	15.407	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.18	3.751	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.17	1.106	
c-2-Butene	00590-18-1	14.26	1.14	16.299	
ortho-Xylene	00095-47-6	7.58	1.06	8.040	
n-Decane	00124-18-5	0.59	1.04	0.614	
1-Methylcyclopentene	00693-89-0	12.45	1.04	12.902	
Methylcyclohexane	00108-87-2	1.56	1.02	1.588	
2-Methylhexane	00591-76-4	1.09	1.02	1.104	
Indan	00496-11-7	3.23	1.00	3.220	
n-Octane	00111-65-9	0.80	0.98	0.782	
Unknown #16		3.13	0.91	2.847	
n-Nonane	00111-84-2	0.68	0.87	0.592	
t-2-Hexene	04050-45-7	8.55	0.83	7.064	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.82	4.322	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.80	9.374	
c-1,3-Dimethylcyclohexane	00638-04-0	3.13	0.80	2.506	

Vehicle 209b - Fuel 10 psi E10 - 105°F Static - Test 7424 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.78	6.191	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.77	5.468	
2,2-DiMeHexane	00590-73-8	0.94	0.67	0.632	
2,4-Dimethylpentane	00108-08-7	1.46	0.65	0.945	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.64	4.227	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.60	7.132	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.59	6.900	
2,4-Dimethylhexane	00589-43-5	1.61	0.58	0.932	
2,3-Dimethylpentane	00565-59-3	1.25	0.54	0.679	
3-Methylheptane	00589-81-1	1.12	0.54	0.609	
Cyclopentene	00142-29-0	6.69	0.48	3.194	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.47	5.940	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.47	0.492	
2-Methyl-2-pentene	00625-27-4	11.03	0.44	4.882	
Ethylbenzene	00100-41-4	2.96	0.38	1.136	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.34	0.547	
2,2-Dimethylbutane	00075-83-2	1.11	0.24	0.267	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.22	0.244	
c-1,3-Dimethylcyclopentane	02532-58-3	3.13	0.20	0.618	
t-1,2-Dimethylcyclopentane	00822-50-4	3.13	0.15	0.475	
2-Methylheptane	00592-27-8	0.97	0.04	0.043	
		Total	189.4	593.2	3.131
No MIR available, use weighted average of 3.1310					

Vehicle 209b - Fuel 10 psi E10 - Dynamic - Test 25742					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	44.55	174.871	
n-Butane	00106-97-8	1.08	43.19	46.507	
Ethanol	00064-17-5	1.45	37.14	53.809	
Methane	00074-82-8	0.01	35.35	0.490	
2-Methylbutane (Isopentane)	00078-78-4	1.35	31.49	42.661	
n-Hexane	00110-54-3	1.13	15.57	17.672	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	11.73	62.985	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	9.83	72.625	
t-2-Butene	00624-64-6	15.20	9.53	144.815	
Benzene	00071-43-2	0.69	9.51	6.604	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	8.85	12.365	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	8.29	64.294	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	7.58	9.088	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	6.90	80.773	
1,3,5-Trimethylbenzene	00108-67-8	11.75	6.65	78.216	
3-Methylpentane	00096-14-0	1.69	6.35	10.743	
Cyclohexane	00110-82-7	1.14	6.29	7.158	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	6.14	48.787	
n-Pentane	00109-66-0	1.21	6.13	7.452	
2,3-Dimethylbutane	00079-29-8	0.90	5.63	5.056	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	5.42	23.823	
2,3,5-Trimethylhexane	01069-53-0	1.12	5.38	6.026	
n-Decane	00124-18-5	0.59	5.30	3.133	
Methylcyclopentane	00096-37-7	2.05	5.11	10.470	
Methylcyclohexane	00108-87-2	1.56	4.95	7.701	
t-2-Pentene	00646-04-8	10.47	4.90	51.356	
2-Methyl-2-butene	00513-35-9	14.20	4.68	66.468	
2-Methylhexane	00591-76-4	1.09	4.20	4.560	
1,3-Butadiene	00106-99-0	12.45	4.02	50.073	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	4.00	12.776	
Cyclopentene	00142-29-0	6.69	3.80	25.392	
n-Heptane	00142-82-5	0.97	3.67	3.546	
2-Methyl-1-butene	00563-46-2	6.38	3.40	21.696	
2,3,4-Trimethylpentane	00565-75-3	0.95	3.34	3.167	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	3.28	17.358	
n-Octane	00111-65-9	0.80	3.20	2.550	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	3.15	17.481	
1,2,3-Trimethylbenzene	00526-73-8	11.94	3.06	36.483	
3-Methyl-c-2-pentene	00922-62-3	12.52	2.84	35.612	
c-2-Pentene	00627-20-3	10.28	2.72	27.932	
t-2-Hexene	04050-45-7	8.55	2.65	22.663	
Unknown #16		3.63	2.56	9.299	
2,4-Dimethylhexane	00589-43-5	1.61	2.54	4.080	
3-Methyl-t-2-pentene	00616-12-6	11.66	2.35	27.391	

Vehicle 209b - Fuel 10 psi E10 - Dynamic - Test 25742 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
ortho-Xylene	00095-47-6	7.58	2.21	16.710	
2-Methyl-2-pentene	00625-27-4	11.03	2.20	24.253	
2,3-Dimethylpentane	00565-59-3	1.25	2.16	2.691	
c-2-Butene	00590-18-1	14.26	2.01	28.689	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	2.01	2.192	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	1.98	13.100	
c-1,3-Dimethylcyclopentane	02532-58-3	3.63	1.85	6.726	
n-Nonane	00111-84-2	0.68	1.80	1.229	
1-Methylcyclopentene	00693-89-0	12.45	1.75	21.755	
2,4-Dimethylpentane	00108-08-7	1.46	1.69	2.472	
2-Methylpropane	00075-28-5	1.18	1.62	1.908	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	1.62	12.212	
2-Methylheptane	00592-27-8	0.97	1.53	1.483	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	1.51	10.702	
Styrene	00100-42-5	1.66	1.50	2.493	
3-Methylheptane	00589-81-1	1.12	1.49	1.674	
3,3-Dimethylpentane	00562-49-2	1.12	1.47	1.649	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	1.42	2.282	
t-1,2-Dimethylcyclopentane	00822-50-4	3.63	1.40	5.068	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	1.37	7.912	
2,2-DiMeHexane	00590-73-8	0.94	1.18	1.115	
2,2,5-Trimethylhexane	03522-94-9	1.05	1.15	1.209	
Ethylbenzene	00100-41-4	2.96	1.14	3.382	
2-Methyl-1,3-butadiene	00078-79-5	10.48	1.05	11.022	
Unknown #22		3.63	0.86	3.108	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.56	2.178	
Indan	00496-11-7	3.23	0.44	1.411	
2,2-Dimethylpentane	00590-35-2	1.04	0.42	0.436	
n-Propylbenzene	00103-65-1	1.96	0.26	0.510	
2,2-Dimethylbutane	00075-83-2	1.11	0.20	0.226	
		Total	449.1	1629.8	3.629
No MIR available, use weighted average of 3.6290					

Vehicle 209b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7461

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	218.98	317.298	
n-Butane	00106-97-8	1.08	198.76	214.048	
Toluene	00108-88-3	3.93	124.89	490.191	
2-Methylbutane (Isopentane)	00078-78-4	1.35	122.86	166.463	
n-Hexane	00110-54-3	1.13	69.89	79.304	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	39.64	55.408	
2-Methyl-2-butene	00513-35-9	14.20	29.68	421.352	
Benzene	00071-43-2	0.69	29.49	20.479	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	28.71	34.431	
3-Methylpentane	00096-14-0	1.69	28.66	48.453	
n-Pentane	00109-66-0	1.21	27.93	33.927	
t-2-Pentene	00646-04-8	10.47	26.84	281.076	
Methylcyclopentane	00096-37-7	2.05	20.34	41.693	
Cyclohexane	00110-82-7	1.14	18.50	21.039	
Methanol	00067-56-1	0.66	18.21	11.971	
2,3-Dimethylbutane	00079-29-8	0.90	16.56	14.882	
2-Methylpropane	00075-28-5	1.18	14.35	16.889	
c-2-Pentene	00627-20-3	10.28	13.97	143.652	
Methylcyclohexane	00108-87-2	1.56	13.00	20.214	
2-Methyl-1-butene	00563-46-2	6.38	12.92	82.403	
2,3,4-Trimethylpentane	00565-75-3	0.95	12.54	11.901	
n-Heptane	00142-82-5	0.97	11.91	11.506	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	11.62	90.139	
2-Methylhexane	00591-76-4	1.09	11.28	12.236	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	10.24	32.662	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	9.39	50.443	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	9.15	107.105	
t-2-Hexene	04050-45-7	8.55	8.29	70.836	
2,4-Dimethylpentane	00108-08-7	1.46	8.26	12.061	
c-2-Butene	00590-18-1	14.26	7.59	108.280	
n-Octane	00111-65-9	0.80	6.59	5.245	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	6.49	34.394	
2,4-Dimethylhexane	00589-43-5	1.61	6.16	9.885	
3-Methyl-t-2-pentene	00616-12-6	11.66	6.03	70.364	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	6.03	47.921	
2,3-Dimethylpentane	00565-59-3	1.25	5.76	7.188	
1-Methylcyclopentene	00693-89-0	12.45	5.51	68.669	
Cyclopentene	00142-29-0	6.69	5.38	35.956	
3-Methyl-c-2-pentene	00922-62-3	12.52	5.33	66.740	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	4.98	36.797	
2-Methyl-2-pentene	00625-27-4	11.03	4.93	54.363	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	4.75	7.629	
2,2,5-Trimethylhexane	03522-94-9	1.05	4.72	4.974	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	4.70	31.029	

Vehicle 209b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7461 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1,3,5-Trimethylbenzene	00108-67-8	11.75	3.99	46.921	
n-Decane	00124-18-5	0.59	3.97	2.348	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	3.89	17.096	
ortho-Xylene	00095-47-6	7.58	3.68	27.884	
2,2-Dimethylbutane	00075-83-2	1.11	3.67	4.073	
2,2-DiMeHexane	00590-73-8	0.94	3.59	3.377	
2,3,5-Trimethylhexane	01069-53-0	1.12	3.49	3.905	
2-Methylheptane	00592-27-8	0.97	3.41	3.300	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	3.41	18.899	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	3.15	3.444	
3-Methylheptane	00589-81-1	1.12	3.05	3.435	
t-1,2-Dimethylcyclopentane	00822-50-4	2.84	2.79	7.916	
c-1,3-Dimethylcyclohexane	00638-04-0	2.84	2.43	6.905	
n-Nonane	00111-84-2	0.68	2.32	1.583	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	2.29	13.231	
c-1,3-Dimethylcyclopentane	02532-58-3	2.84	2.20	6.263	
Ethylbenzene	00100-41-4	2.96	2.01	5.961	
n-Propylbenzene	00103-65-1	1.96	1.96	3.833	
2,2-Dimethylpentane	00590-35-2	1.04	1.82	1.900	
Unknown #16		2.84	1.63	4.620	
3,3-Dimethylpentane	00562-49-2	1.12	1.62	1.816	
Indan	00496-11-7	3.23	1.50	4.849	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.35	16.144	
3,5-Dimethylheptane	00926-82-9	1.42	1.33	1.893	
4-Methyloctane	02216-34-4	0.85	1.28	1.088	
Isopropylbenzene (Cumene)	00098-82-8	2.84	1.28	3.625	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.26	1.327	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	1.21	9.487	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	1.11	4.280	
t-1,4-Dimethylcyclohexane	02207-04-7	2.84	1.05	2.970	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	1.03	7.734	
Unknown #14		2.84	0.97	2.769	
Unknown #13		2.84	0.95	2.690	
3-Methyloctane	02216-33-3	0.88	0.94	0.831	
Unknown #5		2.84	0.91	2.588	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	0.91	1.077	
c-2-Heptene	06443-92-1	7.08	0.90	6.354	
3,3-Dimethylhexane	00563-16-6	1.15	0.88	1.016	
1-Nonene	00124-11-8	2.49	0.85	2.112	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.74	6.232	
1,1-Dimethylcyclohexane	00590-66-9	1.12	0.73	0.811	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	0.69	0.591	

Vehicle 209b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7461 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Unknown #8		2.84	0.68	1.945	
2,2-Dimethyloctane	15869-87-1	0.76	0.67	0.510	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.84	0.67	1.914	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.66	4.687	
t-3-Heptene	14686-14-7	6.17	0.64	3.925	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.60	4.852	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.60	6.270	
Unknown #9		2.84	0.57	1.623	
t-4-Octene	14850-23-8	4.69	0.51	2.401	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	0.45	2.955	
Isobutylbenzene	00538-93-2	2.84	0.45	1.271	
c- & t-4-Nonene	02198-23-4	4.42	0.43	1.910	
2,4-Dimethylheptane	02213-23-2	1.26	0.42	0.533	
n-Undecane	01120-21-4	0.52	0.41	0.213	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.41	1.555	
1-Methyl-2-Propylbenzene	01074-17-5	5.43	0.40	2.161	
1-Heptene	00592-76-7	4.29	0.39	1.672	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.34	2.562	
t-2-Nonene	06434-78-2	2.84	0.34	0.960	
1,3-Diethylbenzene	00141-93-5	7.08	0.30	2.111	
sec-Butylbenzene	00135-98-8	2.29	0.28	0.642	
1,4-Diethylbenzene	00105-05-5	4.39	0.28	1.210	
Unknown #3		2.84	0.25	0.716	
c-2-Octene	07642-04-8	2.84	0.24	0.674	
		Total	1345.1	3821.9	2.841
No MIR available, use weighted average of 2.8415					

Vehicle 209b - Fuel 7 psi E10 - 86°F Static - Test 7466

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	8.03	11.636	
Toluene	00108-88-3	3.93	7.65	30.015	
n-Propylbenzene	00103-65-1	1.96	5.24	10.263	
2-Methylbutane (Isopentane)	00078-78-4	1.35	3.82	5.174	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	3.37	18.069	
n-Hexane	00110-54-3	1.13	3.23	3.663	
n-Butane	00106-97-8	1.08	2.21	2.375	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	2.06	15.189	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.47	17.298	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.44	2.015	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	1.40	10.885	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.29	1.549	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.17	1.309	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.09	4.770	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.07	5.949	
3-Methylpentane	00096-14-0	1.69	1.05	1.782	
Cyclohexane	00110-82-7	1.14	0.95	1.080	
Benzene	00071-43-2	0.69	0.95	0.659	
Methylcyclopentane	00096-37-7	2.05	0.89	1.827	
1,4-Diethylbenzene	00105-05-5	4.39	0.87	3.834	
Unknown #16		3.69	0.87	3.204	
c-2-Butene	00590-18-1	14.26	0.83	11.816	
2-Methyl-2-butene	00513-35-9	14.20	0.81	11.538	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.77	0.730	
3-Methylheptane	00589-81-1	1.12	0.72	0.809	
n-Pentane	00109-66-0	1.21	0.69	0.844	
Methylcyclohexane	00108-87-2	1.56	0.68	1.055	
Unknown #5		3.69	0.67	2.468	
2,3-Dimethylbutane	00079-29-8	0.90	0.64	0.574	
Isobutylbenzene	00538-93-2	3.69	0.61	2.261	
1-Methylcyclopentene	00693-89-0	12.45	0.58	7.268	
n-Octane	00111-65-9	0.80	0.58	0.462	
t-2-Pentene	00646-04-8	10.47	0.53	5.579	
ortho-Xylene	00095-47-6	7.58	0.53	3.979	
2-Methyl-1-butene	00563-46-2	6.38	0.52	3.328	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	0.50	3.736	
n-Heptane	00142-82-5	0.97	0.47	0.458	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	0.46	2.665	
c-1,3-Dimethylcyclohexane	00638-04-0	3.69	0.43	1.598	
n-Decane	00124-18-5	0.59	0.42	0.247	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.40	5.010	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.39	4.680	
t-2-Butene	00624-64-6	15.20	0.39	5.921	
2-Methylheptane	00592-27-8	0.97	0.38	0.367	

Vehicle 209b - Fuel 7 psi E10 - 86°F Static - Test 7466 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
3,3-Dimethylpentane	00562-49-2	1.12	0.37	0.414	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.35	0.378	
2-Methylhexane	00591-76-4	1.09	0.34	0.372	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.34	2.404	
Ethylcyclohexane	01678-91-7	1.35	0.32	0.428	
t-2-Hexene	04050-45-7	8.55	0.31	2.691	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.30	3.484	
2,4-Dimethylhexane	00589-43-5	1.61	0.30	0.477	
1,3-Diethylbenzene	00141-93-5	7.08	0.30	2.104	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.29	0.938	
Indan	00496-11-7	3.23	0.29	0.940	
Isopropylbenzene (Cumene)	00098-82-8	3.69	0.29	1.069	
2,4-Dimethylpentane	00108-08-7	1.46	0.29	0.421	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.29	1.904	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.28	3.285	
n-Nonane	00111-84-2	0.68	0.26	0.179	
2,2-DiMeHexane	00590-73-8	0.94	0.26	0.245	
Ethylbenzene	00100-41-4	2.96	0.26	0.758	
2,2-Dimethylbutane	00075-83-2	1.11	0.24	0.262	
2,2,3-Trimethylbutane	00464-06-2	1.05	0.23	0.247	
t-1,4-Dimethylcyclohexane	02207-04-7	3.69	0.23	0.850	
3-Methyloctane	02216-33-3	0.88	0.22	0.197	
c-2-Pentene	00627-20-3	10.28	0.22	2.259	
2-Methyl-2-pentene	00625-27-4	11.03	0.22	2.414	
2,3-Dimethylpentane	00565-59-3	1.25	0.20	0.252	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.17	0.273	
Unknown #22	.	3.69	0.17	0.615	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.15	0.792	
t-1,2-Dimethylcyclopentane	00822-50-4	3.69	0.14	0.520	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.13	0.488	
2,2-Dimethylpentane	00590-35-2	1.04	0.12	0.125	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.10	0.808	
c-1,3-Dimethylcyclopentane	02532-58-3	3.69	0.10	0.374	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.02	0.018	
		Total	71.2	262.9	3.692

No MIR available, use weighted average of 3.6921

Vehicle 209b - Fuel 7 psi E10 - 105°F Static - Test 7467					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	20.03	29.021	
Toluene	00108-88-3	3.93	14.57	57.186	
n-Propylbenzene	00103-65-1	1.96	5.69	11.143	
n-Hexane	00110-54-3	1.13	5.12	5.811	
2-Methylbutane (Isopentane)	00078-78-4	1.35	4.65	6.294	
n-Butane	00106-97-8	1.08	3.45	3.712	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	3.38	18.131	
Benzene	00071-43-2	0.69	2.96	2.053	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	2.62	19.375	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	2.50	3.491	
2-Methyl-2-butene	00513-35-9	14.20	2.46	34.890	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	2.19	2.620	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	2.18	16.910	
t-2-Pentene	00646-04-8	10.47	1.98	20.783	
Methylcyclopentane	00096-37-7	2.05	1.86	3.814	
3-Methylpentane	00096-14-0	1.69	1.83	3.095	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	1.48	5.654	
Cyclohexane	00110-82-7	1.14	1.46	1.658	
n-Pentane	00109-66-0	1.21	1.46	1.768	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.27	7.026	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.16	5.109	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.16	1.298	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.03	12.087	
Methylcyclohexane	00108-87-2	1.56	1.01	1.564	
2,3-Dimethylbutane	00079-29-8	0.90	0.95	0.851	
c-2-Pentene	00627-20-3	10.28	0.93	9.572	
ortho-Xylene	00095-47-6	7.58	0.83	6.264	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.82	5.781	
2-Methyl-1-butene	00563-46-2	6.38	0.75	4.785	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.71	0.672	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.69	2.189	
2-Methylhexane	00591-76-4	1.09	0.64	0.699	
2,4-Dimethylpentane	00108-08-7	1.46	0.53	0.770	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.52	2.739	
2,2-DiMeHexane	00590-73-8	0.94	0.50	0.470	
t-2-Hexene	04050-45-7	8.55	0.49	4.198	
n-Heptane	00142-82-5	0.97	0.46	0.448	
n-Octane	00111-65-9	0.80	0.46	0.366	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.44	5.164	
Indan	00496-11-7	3.23	0.41	1.338	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.41	4.761	
c-2-Butene	00590-18-1	14.26	0.33	4.700	
Cyclopentene	00142-29-0	6.69	0.33	2.177	
2,3-Dimethylpentane	00565-59-3	1.25	0.32	0.395	

Vehicle 209b - Fuel 7 psi E10 - 105°F Static - Test 7467 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,4-Dimethylhexane	00589-43-5	1.61	0.30	0.479	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.24	0.266	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.23	0.363	
2-Methyl-2-pentene	00625-27-4	11.03	0.22	2.452	
n-Nonane	00111-84-2	0.68	0.22	0.151	
t-1,2-Dimethylcyclopentane	00822-50-4	3.37	0.21	0.715	
2-Methylheptane	00592-27-8	0.97	0.21	0.199	
c-1,3-Dimethylcyclopentane	02532-58-3	3.37	0.19	0.644	
Ethylbenzene	00100-41-4	2.96	0.15	0.459	
t-2-Butene	00624-64-6	15.20	0.12	1.777	
2,2-Dimethylbutane	00075-83-2	1.11	0.06	0.067	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.04	0.273	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.01	0.044	
		Total	101.2	340.7	3.368
No MIR available, use weighted average of 3.3679					

Vehicle 209b - Fuel 7 psi E10 - Dynamic - Test 25755					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	35.12	50.894	
n-Propylbenzene	00103-65-1	1.96	30.30	59.383	
Toluene	00108-88-3	3.93	23.82	93.488	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	9.43	50.651	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	5.30	39.116	
Benzene	00071-43-2	0.69	4.86	3.375	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	4.07	31.564	
1,3-Butadiene	00106-99-0	12.45	3.50	43.606	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	3.46	13.217	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	3.41	27.114	
n-Hexane	00110-54-3	1.13	3.36	3.814	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	3.31	3.963	
2-Methyl-2-butene	00513-35-9	14.20	2.45	34.840	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	2.39	27.945	
2,3,5-Trimethylhexane	01069-53-0	1.12	2.38	2.664	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	2.29	3.202	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	2.20	12.185	
t-2-Pentene	00646-04-8	10.47	2.13	22.323	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	2.07	14.643	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.03	8.934	
Methylcyclohexane	00108-87-2	1.56	1.86	2.895	
3-Methyl-c-2-pentene	00922-62-3	12.52	1.76	21.996	
n-Nonane	00111-84-2	0.68	1.59	1.085	
n-Decane	00124-18-5	0.59	1.56	0.923	
ortho-Xylene	00095-47-6	7.58	1.54	11.700	
Indan	00496-11-7	3.23	1.49	4.814	
2-Methyl-1,3-butadiene	00078-79-5	10.48	1.48	15.567	
3-Methylpentane	00096-14-0	1.69	1.31	2.208	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.29	1.224	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	1.26	8.292	
2-Methyl-1-butene	00563-46-2	6.38	1.25	7.965	
2-Methyl-2-pentene	00625-27-4	11.03	1.21	13.386	
2,4-Dimethylpentane	00108-08-7	1.46	1.20	1.745	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	1.18	6.842	
2,2-Dimethylpentane	00590-35-2	1.04	1.15	1.203	
3-Methylheptane	00589-81-1	1.12	1.14	1.278	
t-1,2-Dimethylcyclopentane	00822-50-4	3.80	1.06	4.037	
3-Methyl-t-2-pentene	00616-12-6	11.66	1.03	11.951	
2-Methylhexane	00591-76-4	1.09	1.02	1.112	
2,2-DiMeHexane	00590-73-8	0.94	0.98	0.921	
Methylcyclopentane	00096-37-7	2.05	0.94	1.930	
Unknown #22		3.80	0.88	3.354	
2,3-Dimethylbutane	00079-29-8	0.90	0.84	0.750	

Vehicle 209b - Fuel 7 psi E10 - Dynamic - Test 25755 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,4-Dimethylhexane	00589-43-5	1.61	0.77	1.237	
t-2-Hexene	04050-45-7	8.55	0.73	6.259	
Cyclopentene	00142-29-0	6.69	0.67	4.475	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.66	2.112	
c-2-Pentene	00627-20-3	10.28	0.65	6.641	
n-Pentane	00109-66-0	1.21	0.64	0.780	
Cyclohexane	00110-82-7	1.14	0.61	0.690	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.55	0.597	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.54	0.869	
2,2-Dimethylbutane	00075-83-2	1.11	0.48	0.539	
c-1,3-Dimethylcyclopentane	02532-58-3	3.80	0.46	1.747	
2,3-Dimethylpentane	00565-59-3	1.25	0.34	0.426	
n-Heptane	00142-82-5	0.97	0.29	0.282	
n-Octane	00111-65-9	0.80	0.26	0.209	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.11	0.115	
		Total	184.7	701.1	3.796
No MIR available, use weighted average of 3.7962					

Vehicle 209b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7472

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	221.56	321.030	
Toluene	00108-88-3	3.93	99.93	392.229	
2-Methylbutane (Isopentane)	00078-78-4	1.35	90.34	122.396	
n-Hexane	00110-54-3	1.13	68.20	77.380	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	36.80	51.441	
n-Butane	00106-97-8	1.08	29.36	31.623	
3-Methylpentane	00096-14-0	1.69	26.53	44.862	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	25.38	30.437	
Benzene	00071-43-2	0.69	25.06	17.398	
2-Methyl-2-butene	00513-35-9	14.20	24.20	343.459	
n-Pentane	00109-66-0	1.21	22.72	27.605	
t-2-Pentene	00646-04-8	10.47	21.34	223.528	
Methylcyclopentane	00096-37-7	2.05	19.37	39.708	
Cyclohexane	00110-82-7	1.14	18.08	20.563	
2,3-Dimethylbutane	00079-29-8	0.90	14.93	13.421	
Methanol	00067-56-1	0.66	14.65	9.632	
Methylcyclohexane	00108-87-2	1.56	11.07	17.215	
c-2-Pentene	00627-20-3	10.28	10.84	111.430	
2-Methyl-1-butene	00563-46-2	6.38	10.46	66.727	
2-Methylhexane	00591-76-4	1.09	10.09	10.946	
n-Heptane	00142-82-5	0.97	9.85	9.514	
2,3,4-Trimethylpentane	00565-75-3	0.95	9.77	9.270	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	9.31	29.715	
2,4-Dimethylpentane	00108-08-7	1.46	7.99	11.665	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	7.48	58.032	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	7.27	85.077	
t-2-Hexene	04050-45-7	8.55	7.16	61.179	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	5.50	29.524	
2,3-Dimethylpentane	00565-59-3	1.25	5.29	6.599	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	5.24	27.745	
2,4-Dimethylhexane	00589-43-5	1.61	5.21	8.367	
3-Methyl-t-2-pentene	00616-12-6	11.66	5.12	59.714	
2,2-DiMeHexane	00590-73-8	0.94	5.11	4.812	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	4.95	39.318	
n-Octane	00111-65-9	0.80	4.63	3.688	
1-Methylcyclopentene	00693-89-0	12.45	4.63	57.639	
2-Methyl-2-pentene	00625-27-4	11.03	4.36	48.134	
Cyclopentene	00142-29-0	6.69	4.36	29.130	
c-2-Butene	00590-18-1	14.26	4.23	60.377	
3-Methyl-c-2-pentene	00922-62-3	12.52	4.09	51.143	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	4.08	6.552	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	3.86	25.506	
2-Methylpropane	00075-28-5	1.18	3.80	4.467	
2,2,5-Trimethylhexane	03522-94-9	1.05	3.51	3.694	

Vehicle 209b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7472 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Propane	00074-98-6	0.46	2.77	1.268	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.50	10.963	
2-Methylheptane	00592-27-8	0.97	2.42	2.343	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	2.37	2.585	
ortho-Xylene	00095-47-6	7.58	2.36	17.866	
c-1,3-Dimethylcyclohexane	00638-04-0	2.91	2.35	6.845	
t-1,2-Dimethylcyclopentane	00822-50-4	2.91	2.07	6.012	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	2.06	11.914	
1,3,5-Trimethylbenzene	00108-67-8	11.75	2.00	23.561	
2,2-Dimethylpentane	00590-35-2	1.04	1.99	2.072	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.98	10.977	
c-1,3-Dimethylcyclopentane	02532-58-3	2.91	1.87	5.449	
Ethylcyclohexane	01678-91-7	1.35	1.82	2.450	
3-Methylheptane	00589-81-1	1.12	1.62	1.826	
n-Nonane	00111-84-2	0.68	1.47	1.001	
3,3-Dimethylpentane	00562-49-2	1.12	1.45	1.625	
n-Propylbenzene	00103-65-1	1.96	1.36	2.667	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.27	1.339	
Unknown #16		2.91	1.22	3.559	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	1.20	9.418	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.12	1.253	
Isopropylbenzene (Cumene)	00098-82-8	2.91	1.11	3.242	
2,2-Dimethylbutane	00075-83-2	1.11	0.89	0.986	
t-1,4-Dimethylcyclohexane	02207-04-7	2.91	0.79	2.297	
4-Methyloctane	02216-34-4	0.85	0.72	0.613	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.72	5.804	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.72	2.767	
Unknown #5		2.91	0.71	2.079	
Indan	00496-11-7	3.23	0.70	2.257	
n-Decane	00124-18-5	0.59	0.66	0.391	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.65	4.630	
c-2-Heptene	06443-92-1	7.08	0.54	3.800	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.50	6.000	
Unknown #8		2.91	0.48	1.407	
2,4-Dimethylheptane	02213-23-2	1.26	0.47	0.600	
1-Nonene	00124-11-8	2.49	0.41	1.018	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.41	4.277	
3-Methyloctane	02216-33-3	0.88	0.39	0.347	
t-3-Heptene	14686-14-7	6.17	0.37	2.272	
1,4-Diethylbenzene	00105-05-5	4.39	0.35	1.515	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.91	0.34	0.985	
3,3-Dimethylhexane	00563-16-6	1.15	0.32	0.372	
1,1-Dimethylcyclohexane	00590-66-9	1.12	0.19	0.216	
Unknown #22		2.91	0.11	0.307	
Ethylbenzene	00100-41-4	2.96	0.10	0.294	
		Total	989.6	2879.4	2.909

No MIR available, use weighted average of 2.9095

Vehicle 209b - Fuel 9 psi E0 - 86°F Static - Test 7501					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	11.10	15.044	
Toluene	00108-88-3	3.93	7.07	27.752	
n-Butane	00106-97-8	1.08	5.84	6.286	
n-Hexane	00110-54-3	1.13	3.60	4.079	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	2.11	2.944	
3-Methylpentane	00096-14-0	1.69	1.45	2.453	
n-Pentane	00109-66-0	1.21	1.41	1.708	
Methylcyclopentane	00096-37-7	2.05	0.93	1.897	
Benzene	00071-43-2	0.69	0.93	0.643	
n-Heptane	00142-82-5	0.97	0.78	0.755	
2-Methyl-1-butene	00563-46-2	6.38	0.47	3.021	
2-Methylhexane	00591-76-4	1.09	0.35	0.381	
2,3-Dimethylpentane	00565-59-3	1.25	0.32	0.404	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.32	3.748	
2,4-Dimethylpentane	00108-08-7	1.46	0.25	0.370	
t-2-Pentene	00646-04-8	10.47	0.16	1.711	
2-Methyl-2-butene	00513-35-9	14.20	0.14	2.009	
c-2-Pentene	00627-20-3	10.28	0.07	0.728	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	0.05	0.383	
		Total	37.3	76.3	2.043

Vehicle 209b - Fuel 9 psi E0 - 105°F Static - Test 7504					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	7.46	29.293	
Ethanol	00064-17-5	1.45	3.73	5.410	
n-Butane	00106-97-8	1.08	3.03	3.268	
2-Methylbutane (Isopentane)	00078-78-4	1.35	2.65	3.585	
Cyclohexane	00110-82-7	1.14	2.64	3.007	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	2.25	16.583	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	1.78	13.818	
n-Hexane	00110-54-3	1.13	1.71	1.944	
Benzene	00071-43-2	0.69	1.51	1.046	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	1.50	8.037	
2,4-Dimethylhexane	00589-43-5	1.61	1.11	1.780	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.04	1.244	
2-Methylhexane	00591-76-4	1.09	1.01	1.097	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	0.99	1.388	
2-Methyl-2-butene	00513-35-9	14.20	0.89	12.599	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.88	11.052	
t-2-Butene	00624-64-6	15.20	0.86	13.078	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.84	3.671	
3-Methylpentane	00096-14-0	1.69	0.78	1.324	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.66	0.699	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.64	7.502	
Methylcyclopentane	00096-37-7	2.05	0.50	1.021	
2,3-Dimethylpentane	00565-59-3	1.25	0.48	0.602	
2,2-DiMeHexane	00590-73-8	0.94	0.48	0.452	
3,3-Dimethylpentane	00562-49-2	1.12	0.48	0.533	
n-Heptane	00142-82-5	0.97	0.46	0.445	
n-Pentane	00109-66-0	1.21	0.45	0.541	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.44	0.417	
n-Undecane	01120-21-4	0.52	0.42	0.218	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.42	2.747	
c-2-Butene	00590-18-1	14.26	0.40	5.721	
Methylcyclohexane	00108-87-2	1.56	0.40	0.617	
t-2-Pentene	00646-04-8	10.47	0.40	4.150	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.38	2.122	
Ethylbenzene	00100-41-4	2.96	0.37	1.109	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.35	1.120	
ortho-Xylene	00095-47-6	7.58	0.33	2.480	
2,4-Dimethylpentane	00108-08-7	1.46	0.32	0.466	
2,3-Dimethylbutane	00079-29-8	0.90	0.32	0.283	
Cyclopentene	00142-29-0	6.69	0.31	2.093	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.31	0.500	
2-Methyl-2-pentene	00625-27-4	11.03	0.30	3.341	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.30	3.471	
n-Propylbenzene	00103-65-1	1.96	0.24	0.465	

Vehicle 209b - Fuel 9 psi E0 - 105°F Static - Test 7504 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.23	2.771	
t-2-Hexene	04050-45-7	8.55	0.22	1.843	
2-Methyl-1-butene	00563-46-2	6.38	0.19	1.213	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.17	1.239	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.16	0.870	
c-2-Pentene	00627-20-3	10.28	0.12	1.195	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.11	1.312	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.07	0.084	
		Total	48.1	186.9	3.886

Vehicle 209b - Fuel 9 psi E0 - Dynamic - Test 25761

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	21.51	158.891	
Toluene	00108-88-3	3.93	13.47	52.857	
Ethanol	00064-17-5	1.45	9.01	13.058	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	8.09	43.456	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	6.35	49.266	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	5.79	6.939	
Cyclohexane	00110-82-7	1.14	5.44	6.189	
n-Pentane	00109-66-0	1.21	4.53	5.504	
n-Hexane	00110-54-3	1.13	4.30	4.884	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	4.19	18.426	
n-Butane	00106-97-8	1.08	4.19	4.516	
Unknown #22		4.54	4.16	18.872	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	4.13	5.769	
1,3,5-Trimethylbenzene	00108-67-8	11.75	3.52	41.408	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	3.15	24.983	
3-Methylpentane	00096-14-0	1.69	3.03	5.116	
Benzene	00071-43-2	0.69	2.79	1.939	
2,3,4-Trimethylpentane	00565-75-3	0.95	2.57	2.441	
2-Methyl-2-butene	00513-35-9	14.20	2.10	29.813	
Methylcyclopentane	00096-37-7	2.05	1.95	4.006	
1,3-Butadiene	00106-99-0	12.45	1.95	24.239	
2,3-Dimethylbutane	00079-29-8	0.90	1.84	1.650	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.83	10.148	
ortho-Xylene	00095-47-6	7.58	1.80	13.626	
n-Heptane	00142-82-5	0.97	1.78	1.716	
2,4-Dimethylpentane	00108-08-7	1.46	1.64	2.395	
Ethylbenzene	00100-41-4	2.96	1.62	4.793	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.60	5.116	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.41	16.855	
2-Methylbutane (Isopentane)	00078-78-4	1.35	1.37	1.863	
2,3-Dimethylpentane	00565-59-3	1.25	1.30	1.623	
t-2-Pentene	00646-04-8	10.47	1.27	13.332	
2-Methylhexane	00591-76-4	1.09	1.16	1.260	
n-Propylbenzene	00103-65-1	1.96	1.14	2.240	
c-2-Pentene	00627-20-3	10.28	1.08	11.124	
2,2,5-Trimethylhexane	03522-94-9	1.05	1.06	1.114	
2,4-Dimethylhexane	00589-43-5	1.61	1.03	1.660	
2-Methyl-1-butene	00563-46-2	6.38	0.90	5.765	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.90	1.442	
Methylcyclohexane	00108-87-2	1.56	0.80	1.241	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.79	5.573	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.74	7.778	
t-2-Butene	00624-64-6	15.20	0.67	10.245	
c-2-Butene	00590-18-1	14.26	0.57	8.162	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.43	5.028	
		Total	145.0	658.3	4.541

No MIR available, use weighted average of 4.5409

Vehicle 209b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7508					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	77.44	104.928	
n-Butane	00106-97-8	1.08	62.23	67.019	
Toluene	00108-88-3	3.93	43.02	168.863	
Cyclohexane	00110-82-7	1.14	35.66	40.563	
Ethanol	00064-17-5	1.45	33.17	48.065	
n-Hexane	00110-54-3	1.13	24.59	27.898	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	18.99	26.550	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	14.89	17.849	
3-Methylpentane	00096-14-0	1.69	12.42	21.008	
n-Pentane	00109-66-0	1.21	10.84	13.168	
2-Methyl-2-butene	00513-35-9	14.20	10.26	145.619	
2,3-Dimethylbutane	00079-29-8	0.90	9.84	8.842	
Benzene	00071-43-2	0.69	9.41	6.534	
Methylcyclopentane	00096-37-7	2.05	8.50	17.425	
t-2-Pentene	00646-04-8	10.47	8.46	88.597	
2,3,4-Trimethylpentane	00565-75-3	0.95	6.48	6.148	
c-2-Pentene	00627-20-3	10.28	4.71	48.428	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	4.61	35.780	
2-Methyl-1-butene	00563-46-2	6.38	4.30	27.407	
2,4-Dimethylpentane	00108-08-7	1.46	4.23	6.172	
2-Methylhexane	00591-76-4	1.09	4.00	4.341	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	3.26	10.402	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	3.18	37.221	
2,4-Dimethylhexane	00589-43-5	1.61	3.14	5.036	
t-2-Hexene	04050-45-7	8.55	3.12	26.678	
2,3-Dimethylpentane	00565-59-3	1.25	2.99	3.737	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	2.73	4.377	
3-Methyl-t-2-pentene	00616-12-6	11.66	2.55	29.754	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	2.48	13.134	
2,2,5-Trimethylhexane	03522-94-9	1.05	2.37	2.499	
2,2-DiMeHexane	00590-73-8	0.94	2.31	2.170	
Methylcyclohexane	00108-87-2	1.56	2.26	3.508	
n-Heptane	00142-82-5	0.97	2.24	2.168	
3-Methyl-c-2-pentene	00922-62-3	12.52	2.05	25.607	
2-Methylpropane	00075-28-5	1.18	2.04	2.399	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	2.02	10.862	
2-Methyl-2-pentene	00625-27-4	11.03	1.96	21.648	
Cyclopentene	00142-29-0	6.69	1.82	12.175	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.81	1.978	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	1.77	13.069	
ortho-Xylene	00095-47-6	7.58	1.74	13.179	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	1.73	11.412	
1-Methylcyclopentene	00693-89-0	12.45	1.62	20.182	
c-2-Butene	00590-18-1	14.26	1.59	22.730	

Vehicle 209b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7508 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.48	11.771	
t-2-Butene	00624-64-6	15.20	1.35	20.554	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.34	7.452	
Ethylbenzene	00100-41-4	2.96	1.19	3.520	
2,2-Dimethylbutane	00075-83-2	1.11	1.18	1.307	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.10	12.896	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.00	4.406	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	0.96	5.555	
Unknown #16		2.75	0.95	2.623	
t-1,2-Dimethylcyclopentane	00822-50-4	2.75	0.89	2.455	
n-Octane	00111-65-9	0.80	0.87	0.695	
c-1,3-Dimethylcyclopentane	02532-58-3	2.75	0.83	2.281	
2,2-Dimethylpentane	00590-35-2	1.04	0.79	0.822	
3-Methylheptane	00589-81-1	1.12	0.73	0.822	
n-Propylbenzene	00103-65-1	1.96	0.69	1.356	
2-Methylheptane	00592-27-8	0.97	0.59	0.575	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.49	5.845	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.38	0.421	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.37	2.878	
2,2,3-Trimethylbutane	00464-06-2	1.05	0.32	0.337	
3,3-Dimethylpentane	00562-49-2	1.12	0.29	0.328	
		Total	478.6	1316.0	2.749
No MIR available, use weighted average of 2.7495					

Vehicle 209b - Fuel 7 psi E0 - 86°F Static - Test 7524

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	5.83	22.894	
2-Methylbutane (Isopentane)	00078-78-4	1.35	5.54	7.499	
n-Butane	00106-97-8	1.08	4.28	4.604	
Cyclohexane	00110-82-7	1.14	2.83	3.223	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	2.23	16.498	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.62	1.937	
n-Hexane	00110-54-3	1.13	1.54	1.742	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	1.49	7.996	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.33	1.862	
Ethanol	00064-17-5	1.45	1.24	1.803	
Benzene	00071-43-2	0.69	1.14	0.792	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.10	6.088	
2-Methyl-2-butene	00513-35-9	14.20	1.06	15.026	
3-Methylpentane	00096-14-0	1.69	0.90	1.526	
2,3-Dimethylbutane	00079-29-8	0.90	0.90	0.806	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.82	0.779	
2,4-Dimethylhexane	00589-43-5	1.61	0.79	1.263	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.73	0.793	
n-Propylbenzene	00103-65-1	1.96	0.71	1.397	
n-Pentane	00109-66-0	1.21	0.63	0.762	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.62	7.318	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.58	2.548	
Methylcyclopentane	00096-37-7	2.05	0.56	1.146	
Methylcyclohexane	00108-87-2	1.56	0.54	0.843	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	0.50	3.864	
2,2-DiMeHexane	00590-73-8	0.94	0.47	0.438	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.46	2.450	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.46	5.380	
2,4-Dimethylpentane	00108-08-7	1.46	0.44	0.641	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.42	4.890	
c-2-Pentene	00627-20-3	10.28	0.40	4.160	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.40	1.278	
c-2-Butene	00590-18-1	14.26	0.39	5.610	
t-2-Hexene	04050-45-7	8.55	0.37	3.126	
ortho-Xylene	00095-47-6	7.58	0.36	2.706	
Ethylbenzene	00100-41-4	2.96	0.34	1.018	
2,2-Dimethylbutane	00075-83-2	1.11	0.32	0.359	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.32	2.259	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.27	0.438	
2-Methyl-1-butene	00563-46-2	6.38	0.27	1.732	
2-Methyl-2-pentene	00625-27-4	11.03	0.25	2.788	
2-Methylhexane	00591-76-4	1.09	0.24	0.262	
t-2-Butene	00624-64-6	15.20	0.23	3.452	
3-Methylheptane	00589-81-1	1.12	0.21	0.232	

Vehicle 209b - Fuel 7 psi E0 - 86°F Static - Test 7524 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Cyclopentene	00142-29-0	6.69	0.20	1.332	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.17	0.182	
c- & t-4-Nonene	02198-23-4	4.42	0.08	0.371	
n-Octane	00111-65-9	0.80	0.08	0.067	
t-2-Pentene	00646-04-8	10.47	0.07	0.755	
2,3-Dimethylpentane	00565-59-3	1.25	0.03	0.034	
n-Heptane	00142-82-5	0.97	0.03	0.026	
		Total	46.8	161.0	3.441

Vehicle 209b - Fuel 7 psi E0 - 105°F Static - Test 7527

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	9.38	36.819	
2-Methylbutane (Isopentane)	00078-78-4	1.35	7.23	9.800	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	4.46	32.909	
Cyclohexane	00110-82-7	1.14	3.72	4.228	
n-Butane	00106-97-8	1.08	2.88	3.103	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	2.72	14.588	
Ethanol	00064-17-5	1.45	2.57	3.727	
n-Hexane	00110-54-3	1.13	2.29	2.599	
Benzene	00071-43-2	0.69	2.05	1.425	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	2.01	15.600	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.64	2.288	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.53	1.839	
3-Methylpentane	00096-14-0	1.69	1.24	2.103	
2-Methyl-2-butene	00513-35-9	14.20	1.20	17.094	
n-Pentane	00109-66-0	1.21	1.17	1.418	
t-2-Pentene	00646-04-8	10.47	1.05	11.043	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.05	0.998	
Indan	00496-11-7	3.23	1.03	3.338	
2,3-Dimethylbutane	00079-29-8	0.90	0.87	0.779	
ortho-Xylene	00095-47-6	7.58	0.82	6.213	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.79	9.284	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.73	4.050	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.68	2.978	
Methylcyclopentane	00096-37-7	2.05	0.68	1.384	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.62	7.388	
n-Propylbenzene	00103-65-1	1.96	0.61	1.188	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.57	3.026	
c-2-Pentene	00627-20-3	10.28	0.55	5.668	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.55	6.417	
2,2-DiMeHexane	00590-73-8	0.94	0.51	0.477	
2,4-Dimethylhexane	00589-43-5	1.61	0.50	0.805	
Methylcyclohexane	00108-87-2	1.56	0.45	0.703	
2-Methyl-1-butene	00563-46-2	6.38	0.43	2.765	
2,4-Dimethylpentane	00108-08-7	1.46	0.42	0.611	
t-2-Hexene	04050-45-7	8.55	0.42	3.551	
2-Methyl-2-pentene	00625-27-4	11.03	0.41	4.468	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.39	2.573	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.37	0.589	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.34	4.290	
t-2-Butene	00624-64-6	15.20	0.33	4.960	
Cyclopentene	00142-29-0	6.69	0.31	2.086	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.31	0.323	
c-2-Butene	00590-18-1	1.12	0.28	0.313	
n-Heptane	00142-82-5	0.97	0.23	0.220	

Vehicle 209b - Fuel 7 psi E0 - 105°F Static - Test 7527 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethylbenzene	00100-41-4	2.96	0.21	0.620	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.19	2.235	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.17	0.541	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.15	0.165	
2,3-Dimethylpentane	00565-59-3	1.25	0.12	0.146	
2-Methylhexane	00591-76-4	1.09	0.05	0.058	
		Total	63.3	245.8	3.885

Vehicle 209b - Fuel 7 psi E0 - Dynamic - Test 25768					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	23.40	172.811	
Ethanol	00064-17-5	1.45	19.89	28.822	
2-Methylbutane (Isopentane)	00078-78-4	1.35	15.24	20.645	
n-Butane	00106-97-8	1.08	14.62	15.746	
Toluene	00108-88-3	3.93	12.48	48.992	
Cyclohexane	00110-82-7	1.14	7.61	8.651	
1,3,5-Trimethylbenzene	00108-67-8	11.75	5.25	61.680	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	4.16	4.987	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	3.86	20.746	
n-Hexane	00110-54-3	1.13	3.68	4.173	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	3.32	25.747	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	3.25	4.539	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	3.19	25.356	
Ethylbenzene	00100-41-4	2.96	2.50	7.407	
Benzene	00071-43-2	0.69	2.41	1.671	
n-Propylbenzene	00103-65-1	1.96	2.12	4.155	
Methylcyclopentane	00096-37-7	2.05	2.00	4.092	
3-Methylpentane	00096-14-0	1.69	1.81	3.055	
ortho-Xylene	00095-47-6	7.58	1.67	12.657	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.67	19.932	
t-2-Pentene	00646-04-8	10.47	1.62	17.013	
2,4-Dimethylpentane	00108-08-7	1.46	1.61	2.347	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.53	1.450	
2-Methylhexane	00591-76-4	1.09	1.44	1.559	
2,3-Dimethylpentane	00565-59-3	1.25	1.35	1.687	
2,3-Dimethylbutane	00079-29-8	0.90	1.29	1.160	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.01	3.217	
2-Methyl-2-butene	00513-35-9	14.20	0.84	11.990	
2-Methyl-1-butene	00563-46-2	6.38	0.69	4.421	
n-Pentane	00109-66-0	1.21	0.56	0.677	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.38	1.677	
		Total	146.4	543.1	3.708

Vehicle 209b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7533					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	128.86	174.588	
n-Butane	00106-97-8	1.08	76.34	82.212	
Toluene	00108-88-3	3.93	75.66	296.949	
Cyclohexane	00110-82-7	1.14	64.10	72.906	
t-3-Hexene & c-3-Hexene	13269-52-8+07642-09-3	7.43	38.95	289.368	
Ethanol	00064-17-5	1.45	31.56	45.726	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	30.89	43.183	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	29.15	34.954	
3-Methylpentane	00096-14-0	1.69	21.20	35.842	
Benzene	00071-43-2	0.69	18.26	12.680	
n-Pentane	00109-66-0	1.21	17.87	21.715	
2-Methyl-2-butene	00513-35-9	14.20	16.88	239.595	
Unknown #2		3.24	16.23	52.569	
t-2-Pentene	00646-04-8	10.47	13.99	146.569	
Methylcyclopentane	00096-37-7	2.05	13.65	27.980	
2,3,4-Trimethylpentane	00565-75-3	0.95	12.88	12.220	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	9.85	76.418	
2,4-Dimethylpentane	00108-08-7	1.46	7.65	11.165	
c-2-Pentene	00627-20-3	10.28	7.14	73.417	
2-Methyl-1-butene	00563-46-2	6.38	7.06	45.029	
2-Methylhexane	00591-76-4	1.09	6.85	7.429	
2,2,5-Trimethylhexane	03522-94-9	1.05	6.30	6.638	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	6.23	19.874	
2,4-Dimethylhexane	00589-43-5	1.61	6.06	9.728	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	5.95	43.923	
2,3-Dimethylpentane	00565-59-3	1.25	5.43	6.776	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	4.94	57.832	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	4.88	7.835	
t-2-Hexene	04050-45-7	8.55	4.62	39.527	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	4.62	24.814	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	4.00	31.363	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	3.97	21.015	
3-Methyl-t-2-pentene	00616-12-6	11.66	3.91	45.631	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	3.43	3.741	
2,2-DiMeHexane	00590-73-8	0.94	3.40	3.204	
3-Methyl-c-2-pentene	00922-62-3	12.52	3.10	38.849	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	2.93	18.449	
Cyclopentene	00142-29-0	6.69	2.87	19.158	
c-2-Butene	00590-18-1	14.26	2.81	40.040	
1,3,5-Trimethylbenzene	00108-67-8	11.75	2.80	32.917	
2-Methyl-2-pentene	00625-27-4	11.03	2.76	30.409	
ortho-Xylene	00095-47-6	7.58	2.73	20.661	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	2.72	21.617	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	2.55	16.820	

Vehicle 209b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7533 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.38	10.442	
2,2-Dimethylbutane	00075-83-2	1.11	2.28	2.535	
t-2-Butene	00624-64-6	15.20	2.27	34.435	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	2.01	11.151	
t-1,2-Dimethylcyclopentane	00822-50-4	3.24	1.74	5.650	
c-1,3-Dimethylcyclopentane	02532-58-3	3.24	1.73	5.606	
Ethylbenzene	00100-41-4	2.96	1.69	5.011	
n-Propylbenzene	00103-65-1	1.96	1.61	3.161	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	1.58	6.100	
3-Methylheptane	00589-81-1	1.12	1.57	1.763	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	1.52	8.803	
Unknown #16		3.24	1.49	4.835	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.45	1.625	
n-Octane	00111-65-9	0.80	1.09	0.866	
2,2-Dimethylpentane	00590-35-2	1.04	1.07	1.114	
t-1,4-Dimethylcyclohexane	02207-04-7	3.24	0.97	3.130	
2,2,3-Trimethylbutane	00464-06-2	1.05	0.94	0.996	
2-Methylpropane	00075-28-5	1.18	0.92	1.083	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.89	10.621	
3,3-Dimethylpentane	00562-49-2	1.12	0.87	0.973	
Unknown #5		3.24	0.81	2.609	
Indan	00496-11-7	3.23	0.80	2.602	
Unknown #22	.	3.24	0.77	2.503	
1-Nonene	00124-11-8	2.49	0.62	1.553	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.61	4.293	
t-3-Heptene	14686-14-7	6.17	0.58	3.555	
2,4-Dimethylheptane	02213-23-2	1.26	0.55	0.697	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.55	4.398	
4-Methyloctane	02216-34-4	0.85	0.53	0.452	
n-Undecane	01120-21-4	0.52	0.50	0.259	
n-Nonane	00111-84-2	0.68	0.47	0.318	
c-2-Heptene	06443-92-1	7.08	0.38	2.694	
Isopropylbenzene (Cumene)	00098-82-8	3.24	0.35	1.129	
3,5-Dimethylheptane	00926-82-9	1.42	0.33	0.466	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.28	2.982	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	0.17	1.707	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	0.16	0.137	
		Total	776.5	2515.6	3.239
No MIR available, use weighted average of 3.2395					

Vehicle 210b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7449	51.6	89.7	46.3	143.2	3.096	49
Static	E10 - 7 psi	7468	63.0	96.2	60.6	186.3	3.072	56
	E0 - 9 psi	7523	46.2	121.3	56.1	208.1	3.712	53
	E0 - 7 psi	7547	37.5	90.0	33.7	108.4	3.214	40
105° F	E10 - 10 psi	7451	147.3	102.1	150.3	473.4	3.150	62
Static	E10 - 7 psi	7471	117.5	92.6	108.8	346.6	3.186	69
	E0 - 9 psi	7525	69.8	132.1	92.3	296.6	3.215	62
	E0 - 7 psi	7549	74.0	104.9	77.6	270.6	3.486	48
Dynamic	E10 - 10 psi	25749	198.4	85.9	170.5	569.7	3.342	52
	E10 - 7 psi	25756	189.1	100.1	189.2	710.5	3.754	48
	E0 - 9 psi	25767	178.0	74.9	133.2	328.8	2.468	41
	E0 - 7 psi	25776	234.9	84.5	198.4	848.9	4.278	32
DHB	E10 - 10 psi	7462	1386.1	93.7	1298.2	3812.8	2.937	95
Total	E10 - 7 psi	7482	1192.5	87.0	1037.4	3101.2	2.989	86
	E0 - 9 psi	7531	1143.4	88.3	1010.2	2351.6	2.328	32
	E0 - 7 psi	7550	758.3	87.7	665.0	1927.4	2.898	86

Vehicle 210b - Fuel 10 psi E10 - 86°F Static - Test 7449

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	6.57	9.515	
n-Butane	00106-97-8	1.08	6.22	6.701	
Toluene	00108-88-3	3.93	5.87	23.037	
2-Methylbutane (Isopentane)	00078-78-4	1.35	5.65	7.657	
n-Hexane	00110-54-3	1.13	2.63	2.979	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.51	2.107	
n-Pentane	00109-66-0	1.21	1.17	1.426	
t-2-Butene	00624-64-6	15.20	1.14	17.324	
3-Methylpentane	00096-14-0	1.69	1.12	1.900	
2-Methyl-2-butene	00513-35-9	14.20	1.11	15.724	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.01	1.206	
Benzene	00071-43-2	0.69	0.94	0.651	
t-2-Pentene	00646-04-8	10.47	0.84	8.831	
2-Methylpropane	00075-28-5	1.18	0.75	0.879	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.63	0.701	
2-Methyl-1-butene	00563-46-2	6.38	0.62	3.937	
2,3-Dimethylbutane	00079-29-8	0.90	0.60	0.537	
Methylcyclopentane	00096-37-7	2.05	0.55	1.120	
c-2-Pentene	00627-20-3	10.28	0.46	4.759	
Methylcyclohexane	00108-87-2	1.56	0.45	0.700	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.40	2.128	
2-Methyl-2-pentene	00625-27-4	11.03	0.39	4.312	
Cyclohexane	00110-82-7	1.14	0.37	0.426	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.37	1.186	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	0.35	2.715	
2,2-Dimethylpentane	00590-35-2	1.04	0.34	0.353	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.33	3.871	
2,4-Dimethylpentane	00108-08-7	1.46	0.33	0.479	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.31	2.434	
3-Methylheptane	00589-81-1	1.12	0.29	0.327	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.27	0.260	
t-2-Hexene	04050-45-7	8.55	0.26	2.197	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.24	1.592	
n-Decane	00124-18-5	0.59	0.24	0.141	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.23	2.675	
n-Octane	00111-65-9	0.80	0.20	0.160	
2,2-DiMeHexane	00590-73-8	0.94	0.19	0.181	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.19	1.040	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.18	0.291	
2-Methylhexane	00591-76-4	1.09	0.14	0.154	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.13	1.590	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.13	0.141	
c-1,3-Dimethylcyclopentane	02532-58-3	3.10	0.12	0.365	

Vehicle 210b - Fuel 10 psi E10 - 86°F Static - Test 7449 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Cyclopentene	00142-29-0	6.69	0.11	0.716	
2,2-Dimethylbutane	00075-83-2	1.11	0.10	0.107	
c-2-Butene	00590-18-1	14.26	0.09	1.335	
2,3-Dimethylpentane	00565-59-3	1.25	0.09	0.116	
n-Heptane	00142-82-5	0.97	0.03	0.026	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.02	0.201	
		Total	46.3	143.2	3.096
No MIR available, use weighted average of 3.0957					

Vehicle 210b - Fuel 10 psi E10 - 105°F Static - Test 7451

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	26.13	37.866	
n-Butane	00106-97-8	1.08	22.93	24.694	
Toluene	00108-88-3	3.93	17.77	69.730	
2-Methylbutane (Isopentane)	00078-78-4	1.35	10.04	13.603	
n-Hexane	00110-54-3	1.13	6.79	7.701	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	4.67	34.461	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	4.35	6.083	
Benzene	00071-43-2	0.69	3.49	2.427	
2-Methyl-2-butene	00513-35-9	14.20	3.06	43.498	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	3.04	3.644	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	2.89	15.532	
t-2-Pentene	00646-04-8	10.47	2.72	28.535	
3-Methylpentane	00096-14-0	1.69	2.66	4.501	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	2.57	19.932	
Methylcyclopentane	00096-37-7	2.05	2.02	4.136	
Cyclohexane	00110-82-7	1.14	1.91	2.177	
n-Pentane	00109-66-0	1.21	1.85	2.250	
c-2-Pentene	00627-20-3	10.28	1.60	16.490	
2,3-Dimethylbutane	00079-29-8	0.90	1.55	1.396	
Methylcyclohexane	00108-87-2	1.56	1.47	2.291	
n-Heptane	00142-82-5	0.97	1.36	1.318	
2-Methylpropane	00075-28-5	1.18	1.30	1.525	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.22	14.397	
2-Methyl-1-butene	00563-46-2	6.38	1.22	7.791	
ortho-Xylene	00095-47-6	7.58	1.05	7.959	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.00	4.408	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.98	12.273	
2-Methylhexane	00591-76-4	1.09	0.95	1.035	
2,2-DiMeHexane	00590-73-8	0.94	0.92	0.870	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.91	0.865	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.86	2.756	
2,4-Dimethylpentane	00108-08-7	1.46	0.80	1.168	
Indan	00496-11-7	3.23	0.80	2.579	
t-2-Hexene	04050-45-7	8.55	0.78	6.705	
c-2-Butene	00590-18-1	14.26	0.70	9.989	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.69	8.092	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.66	4.330	
Ethylbenzene	00100-41-4	2.96	0.64	1.908	
2,2-Dimethylpentane	00590-35-2	1.04	0.63	0.659	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.63	7.340	
t-1,2-Dimethylcyclopentane	00822-50-4	3.15	0.63	1.971	
2-Methyl-2-pentene	00625-27-4	11.03	0.62	6.889	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.61	0.687	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.60	4.777	

Vehicle 210b - Fuel 10 psi E10 - 105°F Static - Test 7451 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.58	3.232	
n-Octane	00111-65-9	0.80	0.56	0.442	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.49	2.597	
n-Decane	00124-18-5	0.59	0.48	0.286	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.44	0.459	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.43	5.152	
2,4-Dimethylhexane	00589-43-5	1.61	0.39	0.627	
2,3-Dimethylpentane	00565-59-3	1.25	0.39	0.487	
n-Propylbenzene	00103-65-1	1.96	0.38	0.752	
3-Methylheptane	00589-81-1	1.12	0.37	0.412	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.35	0.561	
n-Nonane	00111-84-2	0.68	0.34	0.230	
c-1,3-Dimethylcyclopentane	02532-58-3	3.15	0.28	0.878	
t-2-Butene	00624-64-6	15.20	0.21	3.145	
2,2-Dimethylbutane	00075-83-2	1.11	0.14	0.157	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.14	0.153	
2-Methylheptane	00592-27-8	0.97	0.13	0.125	
Cyclopentene	00142-29-0	6.69	0.07	0.483	
		Total	150.3	473.4	3.150
No MIR available, use weighted average of 3.1499					

Vehicle 210b - Fuel 10 psi E10 - Dynamic - Test 25749

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	25.42	99.788	
Ethanol	00064-17-5	1.45	25.37	36.763	
Methane	00074-82-8	0.01	16.82	0.233	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	7.94	58.673	
n-Butane	00106-97-8	1.08	7.24	7.798	
n-Hexane	00110-54-3	1.13	6.62	7.507	
Methanol	00067-56-1	0.66	5.82	3.824	
Benzene	00071-43-2	0.69	4.96	3.443	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	4.67	54.675	
2-Methylbutane (Isopentane)	00078-78-4	1.35	4.63	6.271	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	4.00	31.059	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	3.52	18.915	
Methylcyclopentane	00096-37-7	2.05	3.01	6.175	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	2.90	3.474	
2-Methyl-2-butene	00513-35-9	14.20	2.88	40.952	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	2.74	3.831	
2-Methylpropane	00075-28-5	1.18	2.34	2.748	
n-Pentane	00109-66-0	1.21	2.10	2.556	
Cyclohexane	00110-82-7	1.14	2.09	2.379	
1,3,5-Trimethylbenzene	00108-67-8	11.75	2.03	23.901	
3-Methylpentane	00096-14-0	1.69	1.67	2.824	
3-Methyl-t-2-pentene	00616-12-6	11.66	1.61	18.781	
Methylcyclohexane	00108-87-2	1.56	1.60	2.481	
3-Methyl-c-2-pentene	00922-62-3	12.52	1.59	19.901	
2,3-Dimethylbutane	00079-29-8	0.90	1.58	1.424	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.58	5.042	
2,2-DiMeHexane	00590-73-8	0.94	1.56	1.470	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.54	6.753	
t-2-Pentene	00646-04-8	10.47	1.53	16.010	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.49	11.796	
ortho-Xylene	00095-47-6	7.58	1.36	10.282	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.29	1.224	
n-Decane	00124-18-5	0.59	1.28	0.759	
2-Methyl-1-butene	00563-46-2	6.38	1.23	7.828	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.16	6.420	
2-Methylhexane	00591-76-4	1.09	1.15	1.251	
2-Methylheptane	00592-27-8	0.97	1.14	1.100	
n-Propylbenzene	00103-65-1	1.96	1.11	2.183	
2,4-Dimethylhexane	00589-43-5	1.61	1.10	1.771	
2,2,5-Trimethylhexane	03522-94-9	1.05	1.03	1.080	
2-Methyl-2-pentene	00625-27-4	11.03	0.90	9.924	
n-Octane	00111-65-9	0.80	0.81	0.644	
c-2-Pentene	00627-20-3	10.28	0.80	8.190	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.61	7.339	

Vehicle 210b - Fuel 10 psi E10 - Dynamic - Test 25749 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,3-Dimethylpentane	00565-59-3	1.25	0.60	0.746	
Cyclopentene	00142-29-0	6.69	0.38	2.517	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.35	0.568	
Indan	00496-11-7	3.23	0.35	1.128	
2,4-Dimethylpentane	00108-08-7	1.46	0.34	0.499	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.25	1.330	
n-Heptane	00142-82-5	0.97	0.23	0.222	
t-2-Hexene	04050-45-7	8.55	0.15	1.252	
		Total	170.5	569.7	3.342

Vehicle 210b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7462

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	220.95	320.157	
n-Butane	00106-97-8	1.08	150.10	161.650	
2-Methylbutane (Isopentane)	00078-78-4	1.35	119.32	161.666	
Toluene	00108-88-3	3.93	111.73	438.558	
n-Hexane	00110-54-3	1.13	85.02	96.470	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	50.76	70.959	
3-Methylpentane	00096-14-0	1.69	37.11	62.747	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	34.01	40.781	
2-Methyl-2-butene	00513-35-9	14.20	32.37	459.437	
n-Pentane	00109-66-0	1.21	28.89	35.099	
Benzene	00071-43-2	0.69	27.84	19.331	
t-2-Pentene	00646-04-8	10.47	27.08	283.609	
Methylcyclopentane	00096-37-7	2.05	24.81	50.848	
Cyclohexane	00110-82-7	1.14	22.52	25.614	
2,3-Dimethylbutane	00079-29-8	0.90	20.90	18.782	
c-2-Pentene	00627-20-3	10.28	14.07	144.667	
2-Methylhexane	00591-76-4	1.09	14.03	15.225	
Methylcyclohexane	00108-87-2	1.56	13.58	21.118	
2-Methyl-1-butene	00563-46-2	6.38	13.52	86.241	
n-Heptane	00142-82-5	0.97	12.84	12.404	
2,3,4-Trimethylpentane	00565-75-3	0.95	12.58	11.936	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	12.19	38.911	
2,4-Dimethylpentane	00108-08-7	1.46	10.87	15.859	
t-2-Butene	00624-64-6	15.20	9.42	143.219	
t-2-Hexene	04050-45-7	8.55	8.95	76.543	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	8.83	103.340	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	8.39	65.050	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	7.37	39.025	
2,3-Dimethylpentane	00565-59-3	1.25	7.06	8.810	
2-Methylpropane	00075-28-5	1.18	6.88	8.091	
3-Methyl-t-2-pentene	00616-12-6	11.66	6.78	79.092	
2,2-DiMeHexane	00590-73-8	0.94	6.44	6.064	
c-2-Butene	00590-18-1	14.26	6.05	86.334	
1-Methylcyclopentene	00693-89-0	12.45	5.82	72.486	
3-Methyl-c-2-pentene	00922-62-3	12.52	5.81	72.707	
2,4-Dimethylhexane	00589-43-5	1.61	5.74	9.222	
2-Methyl-2-pentene	00625-27-4	11.03	5.70	62.866	
n-Propylbenzene	00103-65-1	1.96	5.60	10.970	
Cyclopentene	00142-29-0	6.69	5.49	36.724	
n-Octane	00111-65-9	0.80	5.29	4.214	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	5.07	33.491	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	4.74	25.450	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	4.35	6.976	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	4.32	34.326	

Vehicle 210b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7462 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	4.19	30.982	
2,2,5-Trimethylhexane	03522-94-9	1.05	3.41	3.587	
2-Methylheptane	00592-27-8	0.97	3.08	2.978	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	2.91	3.177	
2,2-Dimethylbutane	00075-83-2	1.11	2.88	3.197	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	2.87	16.584	
t-1,2-Dimethylcyclopentane	00822-50-4	2.94	2.84	8.354	
ortho-Xylene	00095-47-6	7.58	2.72	20.614	
Propane	00074-98-6	0.46	2.57	1.173	
3-Methylheptane	00589-81-1	1.12	2.39	2.686	
c-1,3-Dimethylcyclopentane	02532-58-3	2.94	2.36	6.944	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.19	9.607	
c-1,3-Dimethylcyclohexane	00638-04-0	2.94	2.01	5.913	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.90	22.357	
2,2-Dimethylpentane	00590-35-2	1.04	1.87	1.948	
3,3-Dimethylpentane	00562-49-2	1.12	1.64	1.838	
Ethylbenzene	00100-41-4	2.96	1.56	4.622	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.51	8.373	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.48	1.557	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.48	1.654	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	1.33	10.441	
3,5-Dimethylheptane	00926-82-9	1.42	1.27	1.813	
n-Nonane	00111-84-2	0.68	1.24	0.846	
n-Decane	00124-18-5	0.59	1.10	0.649	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.94	3.641	
t-1,4-Dimethylcyclohexane	02207-04-7	2.94	0.93	2.719	
4-Methyloctane	02216-34-4	0.85	0.84	0.710	
n-Undecane	01120-21-4	0.52	0.78	0.407	
Unknown #16		2.94	0.77	2.266	
1,3-Butadiene	00106-99-0	12.45	0.75	9.317	
3,3-Dimethylhexane	00563-16-6	1.15	0.75	0.859	
Unknown #8		2.94	0.71	2.071	
Unknown #5		2.94	0.70	2.055	
c-2-Heptene	06443-92-1	7.08	0.64	4.497	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	0.54	3.522	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.53	5.604	
t-3-Heptene	14686-14-7	6.17	0.51	3.162	
2,4-Dimethylheptane	02213-23-2	1.26	0.51	0.643	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.49	3.501	
3-Methyloctane	02216-33-3	0.88	0.40	0.358	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.40	3.349	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.39	3.119	

Vehicle 210b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7462 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.36	4.244	
Unknown #22	.	2.94	0.34	0.989	
1-Heptene	00592-76-7	4.29	0.33	1.428	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.94	0.32	0.933	
1-Nonene	00124-11-8	2.49	0.32	0.786	
Isopropylbenzene (Cumene)	00098-82-8	2.94	0.28	0.835	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.28	1.744	
Indan	00496-11-7	3.23	0.27	0.886	
1,1-Dimethylcyclohexane	00590-66-9	1.12	0.17	0.186	
		Total	1298.2	3812.8	2.937
No MIR available, use weighted average of 2.9369					

Vehicle 210b - Fuel 7 psi E10 - 86°F Static - Test 7468

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	9.09	13.176	
Toluene	00108-88-3	3.93	7.16	28.122	
n-Propylbenzene	00103-65-1	1.96	6.76	13.254	
n-Hexane	00110-54-3	1.13	3.69	4.183	
2-Methylbutane (Isopentane)	00078-78-4	1.35	3.45	4.674	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	2.06	2.876	
Benzene	00071-43-2	0.69	1.76	1.225	
2-Methyl-2-butene	00513-35-9	14.20	1.70	24.198	
3-Methylpentane	00096-14-0	1.69	1.66	2.811	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.63	1.952	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	1.40	7.514	
t-2-Pentene	00646-04-8	10.47	0.99	10.400	
Cyclohexane	00110-82-7	1.14	0.99	1.128	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	0.93	6.846	
n-Butane	00106-97-8	1.08	0.91	0.984	
c-2-Pentene	00627-20-3	10.28	0.90	9.302	
2,3-Dimethylbutane	00079-29-8	0.90	0.90	0.809	
n-Pentane	00109-66-0	1.21	0.86	1.048	
Methylcyclopentane	00096-37-7	2.05	0.75	1.538	
2-Methylheptane	00592-27-8	0.97	0.71	0.688	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.68	0.712	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	0.67	5.176	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.64	0.611	
ortho-Xylene	00095-47-6	7.58	0.63	4.770	
n-Heptane	00142-82-5	0.97	0.62	0.599	
Methylcyclohexane	00108-87-2	1.56	0.61	0.946	
2,2-DiMeHexane	00590-73-8	0.94	0.60	0.562	
2-Methylhexane	00591-76-4	1.09	0.54	0.588	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.40	1.292	
c-1,3-Dimethylcyclohexane	00638-04-0	3.07	0.40	1.234	
2,4-Dimethylhexane	00589-43-5	1.61	0.39	0.634	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.38	1.677	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.38	4.415	
3-Methylheptane	00589-81-1	1.12	0.38	0.422	
2-Methyl-1-butene	00563-46-2	6.38	0.36	2.322	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.36	2.545	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.36	0.574	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.35	1.947	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.35	1.846	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.30	3.487	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.29	0.326	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.27	2.165	
2,2-Dimethylpentane	00590-35-2	1.04	0.25	0.263	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.25	2.875	

Vehicle 210b - Fuel 7 psi E10 - 86°F Static - Test 7468 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,4-Dimethylpentane	00108-08-7	1.46	0.25	0.359	
n-Octane	00111-65-9	0.80	0.24	0.187	
2,3-Dimethylpentane	00565-59-3	1.25	0.22	0.280	
t-2-Hexene	04050-45-7	8.55	0.22	1.879	
Cyclopentene	00142-29-0	6.69	0.18	1.182	
2-Methyl-2-pentene	00625-27-4	11.03	0.17	1.892	
Ethylbenzene	00100-41-4	2.96	0.17	0.492	
Indan	00496-11-7	3.23	0.15	0.501	
t-1,2-Dimethylcyclopentane	00822-50-4	3.07	0.13	0.402	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.07	0.073	
c-1,3-Dimethylcyclopentane	02532-58-3	3.07	0.05	0.165	
c-2-Butene	00590-18-1	14.26	0.01	0.157	
		Total	60.6	186.3	3.072
No MIR available, use weighted average of 3.0717					

Vehicle 210b - Fuel 7 psi E10 - 105°F Static - Test 7471

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	19.89	28.827	
Toluene	00108-88-3	3.93	14.19	55.715	
n-Hexane	00110-54-3	1.13	6.43	7.298	
2-Methylbutane (Isopentane)	00078-78-4	1.35	5.86	7.933	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	3.47	4.855	
3-Methylpentane	00096-14-0	1.69	2.92	4.939	
Benzene	00071-43-2	0.69	2.82	1.956	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	2.80	3.358	
Methanol	00067-56-1	0.66	2.75	1.806	
Cyclohexane	00110-82-7	1.14	2.70	3.075	
n-Butane	00106-97-8	1.08	2.33	2.512	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	2.24	12.029	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	2.17	16.849	
2-Methyl-2-butene	00513-35-9	14.20	2.07	29.337	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	2.01	14.814	
Methylcyclopentane	00096-37-7	2.05	1.97	4.031	
t-2-Pentene	00646-04-8	10.47	1.83	19.185	
n-Pentane	00109-66-0	1.21	1.81	2.202	
2-Methylhexane	00591-76-4	1.09	1.63	1.770	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.48	4.732	
2,3-Dimethylbutane	00079-29-8	0.90	1.47	1.322	
n-Heptane	00142-82-5	0.97	1.28	1.240	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.24	14.615	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.07	4.690	
c-2-Pentene	00627-20-3	10.28	1.04	10.707	
2-Methyl-1-butene	00563-46-2	6.38	1.03	6.540	
2,4-Dimethylpentane	00108-08-7	1.46	1.01	1.469	
3,3-Dimethylpentane	00562-49-2	1.12	0.96	1.073	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.91	0.859	
Methylcyclohexane	00108-87-2	1.56	0.82	1.270	
2,3-Dimethylpentane	00565-59-3	1.25	0.73	0.912	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.68	3.770	
Cyclopentene	00142-29-0	6.69	0.68	4.544	
ortho-Xylene	00095-47-6	7.58	0.65	4.925	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.64	8.054	
Unknown #16		8.55	0.64	5.476	
Indan	00496-11-7	3.23	0.64	2.071	
n-Octane	00111-65-9	0.80	0.63	0.505	
2,4-Dimethylhexane	00589-43-5	1.61	0.62	0.995	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.60	7.052	
Ethylbenzene	00100-41-4	2.96	0.48	1.412	
t-2-Hexene	04050-45-7	8.55	0.47	3.992	
2,2-Dimethylpentane	00590-35-2	1.04	0.47	0.486	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.45	3.215	

Vehicle 210b - Fuel 7 psi E10 - 105°F Static - Test 7471 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Nonane	00111-84-2	0.68	0.43	0.296	
2,2-DiMeHexane	00590-73-8	0.94	0.41	0.389	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.41	3.232	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.40	2.674	
3-Methylheptane	00589-81-1	1.12	0.39	0.433	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.38	0.613	
c-2-Butene	00590-18-1	14.26	0.38	5.403	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.37	4.356	
n-Decane	00124-18-5	0.59	0.31	0.181	
1,4-Diethylbenzene	00105-05-5	4.39	0.30	1.336	
2-Methyl-2-pentene	00625-27-4	11.03	0.30	3.320	
2,2,3-Trimethylbutane	00464-06-2	1.05	0.26	0.274	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.23	2.801	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.21	0.222	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.21	0.225	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.20	0.224	
2,2-Dimethylbutane	00075-83-2	1.11	0.19	0.207	
Unknown #5		3.19	0.18	0.577	
Ethylcyclohexane	01678-91-7	1.35	0.15	0.208	
t-1,4-Dimethylcyclohexane	02207-04-7	3.19	0.14	0.441	
c-1,3-Dimethylcyclopentane	02532-58-3	3.19	0.11	0.364	
3-Methyloctane	02216-33-3	0.88	0.11	0.098	
c-1,3-Dimethylcyclohexane	00638-04-0	3.19	0.08	0.255	
2-Methylheptane	00592-27-8	0.97	0.04	0.037	
t-1,2-Dimethylcyclopentane	00822-50-4	3.19	0.01	0.016	
		Total	108.8	346.6	3.186
No MIR available, use weighted average of 3.1858					

Vehicle 210b - Fuel 7 psi E10 - Dynamic - Test 25756					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Propylbenzene	00103-65-1	1.96	49.37	96.738	
Ethanol	00064-17-5	1.45	25.13	36.416	
Toluene	00108-88-3	3.93	23.14	90.836	
Methane	00074-82-8	0.01	12.96	0.180	
Unknown #9		3.75	8.61	32.314	
t-2-Butene	00624-64-6	15.20	6.42	97.600	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	5.35	28.739	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	4.81	35.510	
Unknown #22	.	3.75	4.46	16.759	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	4.17	32.377	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	3.83	44.790	
1,3,5-Trimethylbenzene	00108-67-8	11.75	3.34	39.255	
Benzene	00071-43-2	0.69	3.13	2.176	
Methylcyclohexane	00108-87-2	1.56	2.62	4.079	
2,4-Dimethylpentane	00108-08-7	1.46	2.59	3.777	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.37	10.407	
Unknown #16		3.75	2.36	8.872	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	2.25	12.469	
2-Methyl-2-butene	00513-35-9	14.20	2.22	31.533	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.66	1.579	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	1.49	8.598	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.33	15.834	
t-1,2-Dimethylcyclopentane	00822-50-4	3.75	1.25	4.692	
Methylcyclopentane	00096-37-7	2.05	1.17	2.405	
ortho-Xylene	00095-47-6	7.58	1.15	8.702	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.14	1.366	
n-Nonane	00111-84-2	0.68	1.10	0.750	
n-Heptane	00142-82-5	0.97	1.05	1.010	
c-1,3-Dimethylcyclohexane	00638-04-0	3.75	1.03	3.878	
2,4-Dimethylhexane	00589-43-5	1.61	0.79	1.272	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.79	1.272	
n-Octane	00111-65-9	0.80	0.77	0.610	
c-2-Pentene	00627-20-3	10.28	0.75	7.761	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.57	0.622	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	3.82	0.57	2.162	
n-Hexane	00110-54-3	1.13	0.54	0.608	
1,4-Diethylbenzene	00105-05-5	4.39	0.51	2.247	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.42	4.887	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.40	4.984	
c-2-Butene	00590-18-1	14.26	0.34	4.917	
2,3-Dimethylpentane	00565-59-3	1.25	0.34	0.427	
2-Methylhexane	00591-76-4	1.09	0.30	0.325	
2-Methyl-2-pentene	00625-27-4	11.03	0.21	2.312	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.20	1.587	

Vehicle 210b - Fuel 7 psi E10 - Dynamic - Test 25756 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.09	0.092	
Cyclopentene	00142-29-0	6.69	0.08	0.560	
n-Undecane	01120-21-4	0.52	0.03	0.014	
t-2-Hexene	04050-45-7	8.55	0.02	0.179	
		Total	189.2	710.5	3.754
No MIR available, use weighted average of 3.7545					

Vehicle 210b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7482

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	189.14	274.057	
Toluene	00108-88-3	3.93	105.48	414.004	
2-Methylbutane (Isopentane)	00078-78-4	1.35	84.31	114.234	
n-Hexane	00110-54-3	1.13	78.27	88.812	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	42.94	60.023	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	32.59	39.085	
3-Methylpentane	00096-14-0	1.69	31.61	53.452	
2-Methyl-2-butene	00513-35-9	14.20	25.77	365.852	
Benzene	00071-43-2	0.69	25.76	17.885	
n-Propylbenzene	00103-65-1	1.96	23.14	45.338	
n-Pentane	00109-66-0	1.21	23.05	28.006	
Methylcyclopentane	00096-37-7	2.05	21.91	44.904	
t-2-Pentene	00646-04-8	10.47	21.33	223.407	
Cyclohexane	00110-82-7	1.14	20.87	23.733	
n-Butane	00106-97-8	1.08	19.35	20.836	
2,3-Dimethylbutane	00079-29-8	0.90	17.41	15.642	
Methylcyclohexane	00108-87-2	1.56	12.74	19.820	
Methanol	00067-56-1	0.66	12.58	8.268	
2-Methylhexane	00591-76-4	1.09	12.28	13.331	
2,3,4-Trimethylpentane	00565-75-3	0.95	12.08	11.463	
c-2-Pentene	00627-20-3	10.28	11.28	116.014	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	11.28	35.981	
n-Heptane	00142-82-5	0.97	11.03	10.652	
2-Methyl-1-butene	00563-46-2	6.38	10.29	65.662	
2,4-Dimethylpentane	00108-08-7	1.46	9.90	14.447	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	9.44	73.237	
t-2-Hexene	04050-45-7	8.55	7.58	64.823	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	7.47	87.416	
2,3-Dimethylpentane	00565-59-3	1.25	6.60	8.243	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	6.45	34.196	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	6.40	34.345	
3-Methyl-t-2-pentene	00616-12-6	11.66	5.93	69.157	
2,2-DiMeHexane	00590-73-8	0.94	5.87	5.526	
3-Methyl-c-2-pentene	00922-62-3	12.52	5.62	70.387	
2,4-Dimethylhexane	00589-43-5	1.61	5.56	8.934	
n-Octane	00111-65-9	0.80	5.51	4.384	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	5.36	39.610	
c-2-Butene	00590-18-1	14.26	5.21	74.262	
1-Methylcyclopentene	00693-89-0	12.45	4.83	60.185	
2-Methyl-2-pentene	00625-27-4	11.03	4.76	52.523	
Cyclopentene	00142-29-0	6.69	4.64	31.020	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	4.62	36.682	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	4.50	29.726	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	4.45	7.138	

Vehicle 210b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7482 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,2,5-Trimethylhexane	03522-94-9	1.05	4.32	4.546	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	3.71	4.056	
2-Methylpropane	00075-28-5	1.18	3.06	3.604	
2-Methylheptane	00592-27-8	0.97	2.89	2.800	
t-1,2-Dimethylcyclopentane	00822-50-4	2.99	2.84	8.492	
ortho-Xylene	00095-47-6	7.58	2.58	19.575	
1,3,5-Trimethylbenzene	00108-67-8	11.75	2.55	29.924	
2,2-Dimethylpentane	00590-35-2	1.04	2.40	2.504	
c-1,3-Dimethylcyclopentane	02532-58-3	2.99	2.21	6.593	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	2.15	11.914	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	2.15	12.399	
Ethylcyclohexane	01678-91-7	1.35	2.09	2.815	
3-Methylheptane	00589-81-1	1.12	2.06	2.315	
2,2-Dimethylbutane	00075-83-2	1.11	1.78	1.982	
3,3-Dimethylpentane	00562-49-2	1.12	1.74	1.945	
Ethylbenzene	00100-41-4	2.96	1.70	5.025	
c-1,3-Dimethylcyclohexane	00638-04-0	2.99	1.65	4.941	
Unknown #16		2.99	1.62	4.840	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.34	1.496	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.24	1.304	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	1.21	4.623	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	1.05	8.207	
4-Methyloctane	02216-34-4	0.85	1.05	0.888	
n-Nonane	00111-84-2	0.68	1.03	0.706	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.90	3.481	
t-1,4-Dimethylcyclohexane	02207-04-7	2.99	0.80	2.390	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	0.76	0.650	
3,3-Dimethylhexane	00563-16-6	1.15	0.75	0.862	
Unknown #5		2.99	0.70	2.085	
1,3-Diethylbenzene	00141-93-5	7.08	0.63	4.457	
Unknown #8		2.99	0.63	1.877	
t-3-Heptene	14686-14-7	6.17	0.62	3.814	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.99	0.53	1.572	
c-2-Heptene	06443-92-1	7.08	0.52	3.652	
n-Decane	00124-18-5	0.59	0.52	0.305	
1-Nonene	00124-11-8	2.49	0.42	1.058	
3-Methyloctane	02216-33-3	0.88	0.41	0.367	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.41	4.327	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	0.38	2.474	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.32	2.696	
2,4-Dimethylheptane	02213-23-2	1.26	0.28	0.352	
1-Octene	00111-66-0	3.14	0.19	0.590	
		Total	1037.4	3101.2	2.989
No MIR available, use weighted average of 2.9895					

Vehicle 210b - Fuel 9 psi E0 - 86°F Static - Test 7523					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	5.96	8.079	
Toluene	00108-88-3	3.93	5.77	22.658	
Cyclohexane	00110-82-7	1.14	4.27	4.855	
n-Butane	00106-97-8	1.08	3.06	3.297	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	1.95	14.395	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.95	2.336	
Ethanol	00064-17-5	1.45	1.83	2.655	
n-Hexane	00110-54-3	1.13	1.60	1.819	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.50	2.095	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	1.41	10.971	
2,3-Dimethylbutane	00079-29-8	10.48	1.23	12.879	
Methylcyclopentane	00096-37-7	2.05	1.22	2.493	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	1.21	6.495	
Benzene	00071-43-2	0.69	1.21	0.838	
Methylcyclohexane	00108-87-2	1.56	1.13	1.752	
t-2-Butene	00624-64-6	15.20	1.12	17.027	
2-Methyl-2-butene	00513-35-9	14.20	1.04	14.806	
c-2-Butene	00590-18-1	1.12	0.98	1.098	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.92	4.027	
n-Pentane	00109-66-0	1.21	0.91	1.102	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.90	4.977	
2,4-Dimethylhexane	00589-43-5	1.61	0.89	1.437	
3-Methylpentane	00096-14-0	1.69	0.88	1.481	
Propane	00074-98-6	0.46	0.82	0.377	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.82	0.864	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.81	0.764	
n-Propylbenzene	00103-65-1	1.96	0.76	1.492	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.75	3.993	
2-Methylpropane	00075-28-5	1.18	0.69	0.813	
Unknown #16		3.71	0.64	2.358	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.58	6.929	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.56	0.895	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.54	6.738	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.52	6.074	
2,4-Dimethylpentane	00108-08-7	1.46	0.52	0.754	
c-2-Pentene	00627-20-3	10.28	0.50	5.134	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.49	0.537	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.47	5.530	
t-2-Pentene	00646-04-8	10.47	0.41	4.242	
2,2-Dimethylbutane	00075-83-2	1.11	0.36	0.404	
t-2-Hexene	04050-45-7	8.55	0.36	3.037	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.32	3.765	
2-Methyl-2-pentene	00625-27-4	11.03	0.30	3.266	
2-Methyl-1-butene	00563-46-2	6.38	0.29	1.876	

Vehicle 210b - Fuel 9 psi E0 - 86°F Static - Test 7523 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.29	0.325	
Unknown #22		3.71	0.26	0.966	
Cyclopentene	00142-29-0	6.69	0.23	1.513	
n-Heptane	00142-82-5	0.97	0.21	0.208	
2,3-Dimethylpentane	00565-59-3	1.25	0.19	0.240	
2-Methylhexane	00591-76-4	1.09	0.14	0.155	
Ethylbenzene	00100-41-4	2.96	0.13	0.392	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.09	0.280	
ortho-Xylene	00095-47-6	7.58	0.08	0.622	
		Total	56.1	208.1	3.712
No MIR available, use weighted average of 3.7122					

Vehicle 210b - Fuel 9 psi E0 - 105°F Static - Test 7525					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	11.62	45.627	
2-Methylbutane (Isopentane)	00078-78-4	1.35	8.51	11.534	
n-Butane	00106-97-8	1.08	7.76	8.352	
Cyclohexane	00110-82-7	1.14	6.68	7.592	
Ethanol	00064-17-5	1.45	5.88	8.523	
n-Hexane	00110-54-3	1.13	3.70	4.199	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	3.00	4.200	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	2.92	3.502	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	2.12	11.380	
Benzene	00071-43-2	0.69	1.98	1.372	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	1.97	15.278	
3-Methylpentane	00096-14-0	1.69	1.92	3.241	
2,3-Dimethylbutane	00079-29-8	0.90	1.69	1.517	
Methylcyclopentane	00096-37-7	2.05	1.51	3.105	
2-Methyl-2-butene	00513-35-9	14.20	1.46	20.719	
n-Pentane	00109-66-0	1.21	1.35	1.644	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.28	1.217	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.24	14.603	
Unknown #16		3.21	1.08	3.478	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.02	5.645	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.02	4.475	
2,4-Dimethylhexane	00589-43-5	1.61	0.99	1.592	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.98	3.142	
Ethylbenzene	00100-41-4	2.96	0.92	2.735	
t-2-Pentene	00646-04-8	10.47	0.91	9.575	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	0.88	6.479	
Indan	00496-11-7	3.23	0.80	2.585	
2-Methylhexane	00591-76-4	1.09	0.78	0.850	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.76	0.804	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.69	1.102	
2,4-Dimethylpentane	00108-08-7	1.46	0.67	0.973	
2,2-DiMeHexane	00590-73-8	0.94	0.66	0.622	
t-2-Hexene	04050-45-7	8.55	0.62	5.321	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.62	0.677	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.61	3.243	
n-Propylbenzene	00103-65-1	1.96	0.61	1.197	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.57	6.652	
Cyclopentene	00142-29-0	6.69	0.57	3.785	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.56	6.578	
c-1,3-Dimethylcyclopentane	02532-58-3	3.21	0.56	1.801	
Methylcyclohexane	00108-87-2	1.56	0.55	0.860	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.53	0.596	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.52	6.493	
2-Methyl-1-butene	00563-46-2	6.38	0.51	3.274	

Vehicle 210b - Fuel 9 psi E0 - 105°F Static - Test 7525 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
ortho-Xylene	00095-47-6	7.58	0.51	3.852	
2,3-Dimethylpentane	00565-59-3	1.25	0.50	0.621	
c-2-Pentene	00627-20-3	10.28	0.50	5.112	
n-Heptane	00142-82-5	0.97	0.50	0.480	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.49	5.904	
c-2-Butene	00590-18-1	14.26	0.43	6.174	
2,2-Dimethylbutane	00075-83-2	1.11	0.43	0.474	
2-Methyl-2-pentene	00625-27-4	11.03	0.39	4.349	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.37	2.467	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.36	2.889	
n-Octane	00111-65-9	0.80	0.36	0.287	
n-Undecane	01120-21-4	0.52	0.34	0.176	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.33	2.347	
1-Methylcyclopentene	00693-89-0	12.45	0.32	4.037	
t-2-Butene	00624-64-6	15.20	0.28	4.224	
n-Nonane	00111-84-2	0.68	0.23	0.157	
1,4-Diethylbenzene	00105-05-5	4.39	0.16	0.685	
2,4-Dimethylheptane	02213-23-2	1.26	0.14	0.177	
		Total	92.3	296.6	3.215
No MIR available, use weighted average of 3.2145					

Vehicle 210b - Fuel 9 psi E0 - Dynamic - Test 25767

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Propylbenzene	00103-65-1	1.96	23.02	45.118	
Toluene	00108-88-3	3.93	18.28	71.734	
Methane	00074-82-8	0.01	11.43	0.158	
n-Butane	00106-97-8	1.08	10.27	11.057	
Ethanol	00064-17-5	1.45	9.56	13.853	
Cyclohexane	00110-82-7	1.14	8.21	9.341	
2-Methylbutane (Isopentane)	00078-78-4	1.35	5.39	7.302	
n-Hexane	00110-54-3	1.13	4.73	5.367	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	4.65	5.579	
Unknown #22	.	2.47	3.41	8.417	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	2.58	3.606	
3-Methylpentane	00096-14-0	1.69	2.39	4.035	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	2.29	12.290	
2,3,5-Trimethylhexane	01069-53-0	1.12	2.26	2.537	
2,2,5-Trimethylhexane	03522-94-9	1.05	2.26	2.385	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	1.99	3.189	
Benzene	00071-43-2	0.69	1.83	1.273	
2,3-Dimethylbutane	00079-29-8	10.48	1.78	18.707	
Methylcyclopentane	00096-37-7	2.05	1.64	3.358	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.55	1.470	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.52	12.053	
t-2-Pentene	00646-04-8	10.47	1.04	10.885	
Methylcyclohexane	00108-87-2	1.56	1.03	1.598	
2,2-Dimethylbutane	00075-83-2	1.11	0.93	1.034	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.93	4.086	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.91	10.817	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.88	10.264	
2,4-Dimethylhexane	00589-43-5	1.61	0.79	1.276	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.76	8.817	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.67	8.414	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	0.67	5.197	
c-2-Butene	00590-18-1	14.26	0.65	9.260	
2,4-Dimethylpentane	00108-08-7	1.46	0.56	0.813	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.45	5.325	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.45	2.510	
2-Methyl-1-butene	00563-46-2	6.38	0.39	2.486	
n-Pentane	00109-66-0	1.21	0.33	0.406	
ortho-Xylene	00095-47-6	7.58	0.25	1.907	
n-Heptane	00142-82-5	0.97	0.21	0.203	
Ethylbenzene	00100-41-4	2.96	0.19	0.551	
2,3-Dimethylpentane	00565-59-3	1.25	0.09	0.107	
		Total	133.2	328.8	2.468
No MIR available, use weighted average of 2.4679					

Vehicle 210b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7531					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	54.04	78.296	
Benzene	00071-43-2	0.69	22.22	15.428	
2-Methylbutane (Isopentane)	00078-78-4	1.35	144.00	195.102	
2,3-Dimethylbutane	00079-29-8	0.90	21.42	19.250	
3-Methylpentane	00096-14-0	1.69	29.96	50.665	
Methylcyclopentane	00096-37-7	2.05	20.36	41.734	
n-Butane	00106-97-8	1.08	155.08	167.008	
2,4-Dimethylpentane	00108-08-7	1.46	11.61	16.947	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	11.63	90.175	
Toluene	00108-88-3	3.93	102.96	404.127	
n-Pentane	00109-66-0	1.21	22.14	26.902	
n-Hexane	00110-54-3	1.13	57.31	65.027	
Cyclohexane	00110-82-7	1.14	108.36	123.241	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	8.62	27.493	
n-Heptane	00142-82-5	0.97	5.50	5.308	
2-Methyl-2-butene	00513-35-9	14.20	22.23	315.503	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	46.07	55.239	
2-Methyl-1-butene	00563-46-2	6.38	8.33	53.151	
2,3-Dimethylpentane	00565-59-3	1.25	8.66	10.809	
2,3,4-Trimethylpentane	00565-75-3	0.95	18.40	17.463	
2,4-Dimethylhexane	00589-43-5	1.61	8.99	14.433	
2,2-DiMeHexane	00590-73-8	0.94	5.68	5.350	
2-Methylhexane	00591-76-4	1.09	10.00	10.857	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	6.51	10.452	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	5.74	30.392	
3-Methyl-t-2-pentene	00616-12-6	11.66	6.25	72.822	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	2.21	16.338	
c-2-Pentene	00627-20-3	10.28	9.61	98.755	
t-2-Pentene	00646-04-8	10.47	17.57	184.018	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	43.96	61.453	
2,2,5-Trimethylhexane	03522-94-9	1.05	7.84	8.251	
t-2-Hexene	04050-45-7	8.55	6.97	59.590	
		Total	1010.2	2351.6	2.328

Vehicle 210b - Fuel 7 psi E0 - 86°F Static - Test 7547

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	2.37	3.428	
Benzene	00071-43-2	0.69	1.75	1.218	
2-Methylbutane (Isopentane)	00078-78-4	1.35	1.94	2.631	
2,3-Dimethylbutane	00079-29-8	0.90	0.35	0.315	
ortho-Xylene	00095-47-6	7.58	0.68	5.127	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	1.10	5.908	
3-Methylpentane	00096-14-0	1.69	0.39	0.658	
Methylcyclopentane	00096-37-7	2.05	0.54	1.098	
Ethylbenzene	00100-41-4	2.96	0.16	0.468	
n-Butane	00106-97-8	1.08	2.49	2.684	
2,4-Dimethylpentane	00108-08-7	1.46	0.44	0.638	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	0.94	7.257	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.33	3.859	
Toluene	00108-88-3	3.93	6.01	23.579	
n-Pentane	00109-66-0	1.21	0.20	0.248	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.26	3.053	
n-Hexane	00110-54-3	1.13	1.08	1.225	
Cyclohexane	00110-82-7	1.14	3.28	3.734	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.31	0.994	
Cyclopentene	00142-29-0	6.69	0.17	1.112	
n-Heptane	00142-82-5	0.97	0.23	0.222	
2-Methyl-2-butene	00513-35-9	14.20	0.47	6.740	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.15	1.742	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.33	1.600	
2-Methyl-1-butene	00563-46-2	6.38	0.08	0.528	
2,3-Dimethylpentane	00565-59-3	1.25	0.46	0.573	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.52	0.496	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.59	0.644	
2,4-Dimethylhexane	00589-43-5	1.61	0.21	0.334	
2-Methylhexane	00591-76-4	1.09	0.45	0.486	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.39	0.633	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.71	3.908	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.64	7.494	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	0.05	0.404	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.54	2.378	
t-2-Butene	00624-64-6	15.20	0.18	2.684	
c-2-Pentene	00627-20-3	10.28	0.36	3.746	
t-2-Pentene	00646-04-8	10.47	0.28	2.891	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	0.81	1.126	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.49	0.514	
		Total	33.7	108.4	3.214

Vehicle 210b - Fuel 7 psi E0 - 105°F Static - Test 7549

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	2.74	3.967	
Benzene	00071-43-2	0.69	2.24	1.555	
2-Methylbutane (Isopentane)	00078-78-4	1.35	8.05	10.900	
2,3-Dimethylbutane	00079-29-8	0.90	1.59	1.431	
ortho-Xylene	00095-47-6	7.58	0.51	3.895	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	1.81	9.736	
3-Methylpentane	00096-14-0	1.69	1.74	2.944	
Methylcyclopentane	00096-37-7	2.05	0.97	1.988	
Ethylbenzene	00100-41-4	2.96	0.70	2.070	
n-Propylbenzene	00103-65-1	1.96	0.36	0.704	
n-Butane	00106-97-8	1.08	5.28	5.681	
2,4-Dimethylpentane	00108-08-7	1.46	0.68	0.989	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	2.47	19.128	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.46	17.163	
Methylcyclohexane	00108-87-2	1.56	0.57	0.884	
Toluene	00108-88-3	3.93	10.95	42.984	
n-Pentane	00109-66-0	1.21	1.36	1.650	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.34	3.983	
n-Hexane	00110-54-3	1.13	2.93	3.325	
Cyclohexane	00110-82-7	1.14	6.44	7.327	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.50	1.605	
Cyclopentene	00142-29-0	6.69	0.72	4.827	
n-Heptane	00142-82-5	0.97	0.48	0.465	
2-Methyl-2-butene	00513-35-9	14.20	1.47	20.870	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.67	7.943	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	2.64	3.163	
2-Methyl-1-butene	00563-46-2	6.38	0.51	3.240	
2,3-Dimethylpentane	00565-59-3	1.25	0.51	0.634	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.15	1.094	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.73	0.794	
2,4-Dimethylhexane	00589-43-5	1.61	0.52	0.829	
c-2-Butene	00590-18-1	14.26	0.30	4.268	
2,2-DiMeHexane	00590-73-8	0.94	0.83	0.783	
2-Methylhexane	00591-76-4	1.09	0.55	0.592	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.45	0.721	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.54	2.886	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.81	4.503	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.58	6.713	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	3.43	25.352	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.95	4.191	
t-2-Butene	00624-64-6	15.20	0.21	3.168	
2-Methyl-2-pentene	00625-27-4	11.03	0.40	4.406	
c-2-Pentene	00627-20-3	10.28	0.62	6.376	
t-2-Pentene	00646-04-8	10.47	0.87	9.127	

Vehicle 210b - Fuel 7 psi E0 - 105°F Static - Test 7549 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	2.87	4.015	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.20	2.467	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.63	0.662	
t-2-Hexene	04050-45-7	8.55	0.30	2.572	
		Total	77.6	270.6	3.486

Vehicle 210b - Fuel 7 psi E0 - Dynamic - Test 25776

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	40.56	299.543	
Ethanol	00064-17-5	1.45	21.41	31.027	
Toluene	00108-88-3	3.93	19.77	77.583	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	14.52	77.953	
n-Butane	00106-97-8	1.08	13.81	14.870	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	13.35	103.515	
Cyclohexane	00110-82-7	1.14	13.23	15.048	
Benzene	00071-43-2	0.69	12.44	8.636	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	7.50	32.943	
Unknown #22	.	4.28	5.84	24.969	
Methylcyclohexane	00108-87-2	1.56	4.61	7.177	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	3.57	19.785	
2,2,5-Trimethylhexane	03522-94-9	1.05	2.96	3.113	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	2.52	3.017	
Indan	00496-11-7	3.23	2.48	8.026	
2-Methylpropane	00075-28-5	1.18	2.45	2.878	
1,3,5-Trimethylbenzene	00108-67-8	11.75	2.36	27.698	
t-1,2-Dimethylcyclopentane	00822-50-4	4.28	2.21	9.475	
2-Methyl-2-butene	00513-35-9	14.20	1.82	25.771	
Methane	00074-82-8	0.01	1.74	0.024	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.39	1.323	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.36	16.196	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.33	1.485	
2,4-Dimethylhexane	00589-43-5	1.61	1.09	1.743	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.67	4.433	
t-2-Butene	00624-64-6	15.20	0.63	9.523	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.57	0.618	
2-Methyl-2-pentene	00625-27-4	11.03	0.57	6.246	
ortho-Xylene	00095-47-6	7.58	0.53	3.979	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.40	4.645	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.40	4.987	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.40	0.637	
		Total	198.4	848.9	4.278

No MIR available, use weighted average of 4.2779

Vehicle 210b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7550					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	85.49	115.836	
Toluene	00108-88-3	3.93	74.41	292.053	
Cyclohexane	00110-82-7	1.14	67.10	76.315	
n-Butane	00106-97-8	1.08	44.50	47.923	
n-Hexane	00110-54-3	1.13	37.15	42.148	
Ethanol	00064-17-5	1.45	29.71	43.055	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	27.65	38.648	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	25.39	30.442	
3-Methylpentane	00096-14-0	1.69	19.28	32.594	
Benzene	00071-43-2	0.69	16.17	11.230	
2-Methyl-2-butene	00513-35-9	14.20	15.53	220.428	
n-Pentane	00109-66-0	1.21	14.40	17.492	
2,3-Dimethylbutane	00079-29-8	0.90	13.64	12.260	
t-2-Pentene	00646-04-8	10.47	12.54	131.368	
Methylcyclopentane	00096-37-7	2.05	12.54	25.696	
2,3,4-Trimethylpentane	00565-75-3	0.95	10.55	10.007	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	8.43	65.411	
2,4-Dimethylpentane	00108-08-7	1.46	6.88	10.036	
c-2-Pentene	00627-20-3	10.28	6.84	70.290	
2-Methylhexane	00591-76-4	1.09	6.27	6.806	
2-Methyl-1-butene	00563-46-2	6.38	6.00	38.260	
2,2-DiMeHexane	00590-73-8	0.94	5.41	5.089	
2,3-Dimethylpentane	00565-59-3	1.25	5.23	6.525	
2,4-Dimethylhexane	00589-43-5	1.61	5.20	8.345	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	4.82	15.364	
t-2-Hexene	04050-45-7	8.55	4.64	39.655	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	4.51	7.237	
2,2,5-Trimethylhexane	03522-94-9	1.05	4.41	4.639	
Methane	00074-82-8	0.01	4.22	0.058	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	4.17	22.386	
Methanol	00067-56-1	0.66	4.02	2.641	
3-Methyl-t-2-pentene	00616-12-6	11.66	3.99	46.498	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	3.97	46.519	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	3.92	20.769	
3-Methyl-c-2-pentene	00922-62-3	12.52	3.44	43.023	
n-Heptane	00142-82-5	0.97	3.12	3.015	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	3.12	3.405	
Cyclopentene	00142-29-0	6.69	2.84	18.970	
2-Methyl-2-pentene	00625-27-4	11.03	2.76	30.451	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	2.62	17.299	
1-Methylcyclopentene	00693-89-0	12.45	2.52	31.397	
ortho-Xylene	00095-47-6	7.58	2.33	17.666	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	2.33	18.509	
c-2-Butene	00590-18-1	14.26	2.31	33.002	

Vehicle 210b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7550

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.28	10.024	
Ethylbenzene	00100-41-4	2.96	2.17	6.436	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.96	10.860	
Methylcyclohexane	00108-87-2	1.56	1.96	3.041	
t-1,2-Dimethylcyclopentane	00822-50-4	2.90	1.75	5.072	
2,2-Dimethylbutane	00075-83-2	1.11	1.74	1.938	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.60	18.834	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.45	1.627	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	1.42	8.188	
c-1,3-Dimethylcyclopentane	02532-58-3	2.90	1.37	3.969	
n-Propylbenzene	00103-65-1	1.96	1.27	2.482	
3-Methylheptane	00589-81-1	1.12	1.25	1.410	
Unknown #16		2.90	1.22	3.535	
2,2-Dimethylpentane	00590-35-2	1.04	1.18	1.235	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.16	1.225	
2-Methylheptane	00592-27-8	0.97	1.13	1.097	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	1.01	7.124	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.96	7.520	
3,3-Dimethylpentane	00562-49-2	1.12	0.92	1.025	
n-Octane	00111-65-9	0.80	0.87	0.694	
Unknown #1		2.90	0.86	2.492	
Ethylene	00074-85-1	8.88	0.84	7.462	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.68	8.106	
Indan	00496-11-7	3.23	0.64	2.084	
c-1,3-Dimethylcyclohexane	00638-04-0	2.90	0.64	1.847	
Unknown #5		2.90	0.55	1.583	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.50	4.050	
3,3-Dimethylhexane	00563-16-6	1.15	0.50	0.577	
t-3-Heptene	14686-14-7	6.17	0.49	3.040	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.47	1.811	
Isopropylbenzene (Cumene)	00098-82-8	2.90	0.47	1.354	
c-2-Heptene	06443-92-1	7.08	0.45	3.160	
1-Nonene	00124-11-8	2.49	0.41	1.019	
1,3-Diethylbenzene	00141-93-5	7.08	0.34	2.375	
Unknown #8		2.90	0.33	0.962	
t-2-Nonene	06434-78-2	2.90	0.32	0.916	
3,5-Dimethylheptane	00926-82-9	1.42	0.31	0.441	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.29	3.029	
4-Methyloctane	02216-34-4	0.85	0.26	0.221	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.24	1.978	
n-Nonane	00111-84-2	0.68	0.22	0.151	
Unknown #10		2.90	0.21	0.605	
		Total	665.0	1927.4	2.898
No MIR available, use weighted average of 2.8982					

Vehicle 213b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7442	74.9	84.5	63.3	229.3	3.620	59
Static	E10 - 7 psi	7464	60.4	77.3	46.7	118.1	2.531	12
	E0 - 9 psi	7506	34.8	88.3	30.7	102.3	3.329	41
	E0 - 7 psi	7526	40.9	86.2	35.3	104.0	2.947	38
105° F	E10 - 10 psi	7446	228.3	105.1	239.8	761.0	3.174	78
Static	E10 - 7 psi	7465	159.2	87.2	138.9	440.2	3.169	64
	E0 - 9 psi	7507	71.1	82.7	58.8	173.0	2.943	32
	E0 - 7 psi	7528	66.8	106.3	71.0	251.7	3.546	50
Dynamic	E10 - 10 psi	25750	144.8	124.2	179.8	839.7	4.669	48
	E10 - 7 psi	25754	284.5	88.3	251.3	879.7	3.500	60
	E0 - 9 psi	25764	191.7	52.9	101.4	314.8	3.105	38
	E0 - 7 psi	25769	141.4	69.4	98.1	381.1	3.885	59
DHB	E10 - 10 psi	7429	1966.7	101.3	1992.2	5290.8	2.656	92
Total	E10 - 7 psi	7473	1769.4	67.1	1187.5	4082.1	3.438	80
	E0 - 9 psi	7516	967.5	88.7	858.6	2298.5	2.677	73
	E0 - 7 psi	7538	917.6	94.2	864.0	2571.4	2.976	80

Vehicle 213b - Fuel 10 psi E10 - 86°F Static - Test 7442

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	16.97	24.593	
Toluene	00108-88-3	3.93	10.78	42.296	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	5.07	37.471	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	2.07	11.117	
n-Butane	00106-97-8	1.08	2.01	2.169	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	1.96	15.195	
Benzene	00071-43-2	0.69	1.62	1.123	
Propane	00074-98-6	0.46	1.53	0.699	
1,4-Diethylbenzene	00105-05-5	4.39	1.34	5.889	
n-Hexane	00110-54-3	1.13	1.12	1.275	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.10	4.841	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.03	12.098	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	0.94	1.127	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.89	0.845	
n-Heptane	00142-82-5	0.97	0.80	0.774	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.67	3.724	
Methylcyclohexane	00108-87-2	1.56	0.67	1.043	
t-2-Pentene	00646-04-8	10.47	0.65	6.813	
2-Methyl-2-butene	00513-35-9	14.20	0.63	8.921	
n-Decane	00124-18-5	0.59	0.58	0.343	
n-Octane	00111-65-9	0.80	0.55	0.441	
ortho-Xylene	00095-47-6	7.58	0.50	3.813	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.48	3.185	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.45	1.448	
2-Methylpropane	00075-28-5	1.18	0.45	0.528	
n-Nonane	00111-84-2	0.68	0.45	0.305	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.41	3.059	
2-Methylhexane	00591-76-4	1.09	0.40	0.433	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.39	4.626	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.39	0.406	
Ethylbenzene	00100-41-4	2.96	0.39	1.141	
2,2-DiMeHexane	00590-73-8	0.94	0.37	0.351	
n-Propylbenzene	00103-65-1	1.96	0.37	0.717	
t-2-Hexene	04050-45-7	8.55	0.35	2.976	
Cyclohexane	00110-82-7	1.14	0.34	0.390	
c-2-Pentene	00627-20-3	10.28	0.33	3.401	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.33	0.361	
Methylcyclopentane	00096-37-7	2.05	0.33	0.670	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.32	0.513	
c-1,3-Dimethylcyclohexane	00638-04-0	3.62	0.32	1.155	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.29	3.373	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.29	2.026	
3-Methylheptane	00589-81-1	1.12	0.29	0.321	
2,4-Dimethylhexane	00589-43-5	1.61	0.28	0.445	

Vehicle 213b - Fuel 10 psi E10 - 86°F Static - Test 7442 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methyl-2-pentene	00625-27-4	11.03	0.24	2.600	
2,3-Dimethylpentane	00565-59-3	1.25	0.22	0.280	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.20	2.364	
t-1,2-Dimethylcyclopentane	00822-50-4	3.62	0.17	0.626	
2,3-Dimethylbutane	00079-29-8	0.90	0.16	0.143	
2,4-Dimethylpentane	00108-08-7	1.46	0.14	0.199	
2-Methylheptane	00592-27-8	0.97	0.13	0.130	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.13	1.037	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.12	1.542	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	0.12	0.161	
c-2-Butene	00590-18-1	14.26	0.09	1.335	
3-Methylpentane	00096-14-0	1.69	0.07	0.121	
Cyclopentene	00142-29-0	6.69	0.04	0.251	
c-1,3-Dimethylcyclopentane	02532-58-3	3.62	0.01	0.039	
2-Methyl-1-butene	00563-46-2	6.38	0.01	0.035	
		Total	63.3	229.3	3.620
No MIR available, use weighted average of 3.6201					

Vehicle 213b - Fuel 10 psi E10 - 105°F Static - Test 7446

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	66.40	96.207	
Toluene	00108-88-3	3.93	29.59	116.147	
n-Butane	00106-97-8	1.08	19.17	20.643	
2-Methylbutane (Isopentane)	00078-78-4	1.35	12.34	16.714	
n-Hexane	00110-54-3	1.13	8.64	9.804	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	6.69	49.398	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	6.07	32.577	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	5.13	7.176	
Benzene	00071-43-2	0.69	4.59	3.185	
3-Methylpentane	00096-14-0	1.69	4.55	7.695	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	4.49	34.840	
2-Methyl-2-butene	00513-35-9	14.20	3.78	53.673	
n-Pentane	00109-66-0	1.21	3.39	4.119	
t-2-Pentene	00646-04-8	10.47	3.37	35.301	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	3.15	3.774	
Methylcyclopentane	00096-37-7	2.05	2.47	5.066	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.28	10.010	
1,3,5-Trimethylbenzene	00108-67-8	11.75	2.22	26.092	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	2.06	24.077	
2,3-Dimethylbutane	00079-29-8	0.90	2.03	1.821	
Cyclohexane	00110-82-7	1.14	2.02	2.298	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.93	10.678	
Methylcyclohexane	00108-87-2	1.56	1.80	2.805	
c-2-Pentene	00627-20-3	10.28	1.74	17.930	
2-Methylpropane	00075-28-5	1.18	1.74	2.042	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.61	1.531	
n-Heptane	00142-82-5	0.97	1.58	1.523	
n-Decane	00124-18-5	0.59	1.50	0.888	
t-2-Butene	00624-64-6	15.20	1.50	22.758	
2-Methyl-1-butene	00563-46-2	6.38	1.48	9.423	
2,2-DiMeHexane	00590-73-8	0.94	1.42	1.335	
2-Methylhexane	00591-76-4	1.09	1.42	1.538	
ortho-Xylene	00095-47-6	7.58	1.40	10.583	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	1.28	6.781	
n-Octane	00111-65-9	0.80	1.22	0.970	
n-Propylbenzene	00103-65-1	1.96	1.17	2.295	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.11	3.544	
n-Nonane	00111-84-2	0.68	1.01	0.693	
t-2-Hexene	04050-45-7	8.55	0.98	8.417	
c-1,3-Dimethylcyclohexane	00638-04-0	3.17	0.98	3.107	
1-Methylcyclopentene	00693-89-0	12.45	0.95	11.784	
2,4-Dimethylpentane	00108-08-7	1.46	0.91	1.328	
2,4-Dimethylhexane	00589-43-5	1.61	0.89	1.432	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.88	1.407	

Vehicle 213b - Fuel 10 psi E10 - 105°F Static - Test 7446 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,3-Dimethylpentane	00565-59-3	1.25	0.87	1.083	
3-Methylheptane	00589-81-1	1.12	0.87	0.974	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.78	9.794	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.72	8.398	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.69	0.757	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.67	0.706	
Ethylbenzene	00100-41-4	2.96	0.67	1.978	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.64	7.621	
Unknown #16		3.17	0.61	1.933	
2-Methyl-2-pentene	00625-27-4	11.03	0.57	6.288	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.55	4.361	
Cyclopentene	00142-29-0	6.69	0.55	3.672	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	0.53	3.051	
3,5-Dimethylheptane	00926-82-9	1.42	0.49	0.700	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.47	3.081	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.47	3.294	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.46	3.484	
2-Methylheptane	00592-27-8	0.97	0.43	0.419	
3,3-Dimethylpentane	00562-49-2	1.12	0.40	0.450	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.40	1.527	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.39	0.436	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.37	2.938	
t-1,4-Dimethylcyclohexane	02207-04-7	3.17	0.37	1.165	
c-2-Butene	00590-18-1	14.26	0.30	4.256	
Indan	00496-11-7	3.23	0.25	0.801	
t-1,2-Dimethylcyclopentane	00822-50-4	3.17	0.24	0.772	
Propane	00074-98-6	0.46	0.21	0.097	
2,2-Dimethylpentane	00590-35-2	1.04	0.19	0.199	
n-Undecane	01120-21-4	0.52	0.17	0.087	
3-Methyloctane	02216-33-3	0.88	0.15	0.133	
2,2-Dimethylbutane	00075-83-2	1.11	0.13	0.140	
c-1,3-Dimethylcyclopentane	02532-58-3	3.17	0.11	0.362	
1,4-Diethylbenzene	00105-05-5	4.39	0.11	0.500	
Unknown #22	.	3.17	0.05	0.151	
		Total	239.8	761.0	3.174

No MIR available, use weighted average of 3.1738

Vehicle 213b - Fuel 10 psi E10 - Dynamic - Test 25750

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	48.10	355.240	
Ethanol	00064-17-5	1.45	20.65	29.922	
Toluene	00108-88-3	3.93	17.09	67.082	
n-Butane	00106-97-8	1.08	12.30	13.248	
Benzene	00071-43-2	0.69	7.28	5.056	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	6.21	33.338	
2-Methylbutane (Isopentane)	00078-78-4	1.35	5.64	7.641	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	5.32	7.443	
n-Hexane	00110-54-3	1.13	4.88	5.535	
1,3,5-Trimethylbenzene	00108-67-8	11.75	4.05	47.553	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	3.92	30.394	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	2.87	22.769	
1,2,3-Trimethylbenzene	00526-73-8	11.94	2.40	28.641	
2-Methyl-2-butene	00513-35-9	14.20	2.27	32.226	
2,3-Dimethylbutane	00079-29-8	0.90	2.13	1.914	
Cyclopentene	00142-29-0	6.69	2.10	14.050	
ortho-Xylene	00095-47-6	7.58	2.10	15.872	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.00	8.784	
n-Pentane	00109-66-0	1.21	1.96	2.382	
2,2-DiMeHexane	00590-73-8	0.94	1.95	1.832	
t-2-Pentene	00646-04-8	10.47	1.71	17.945	
Cyclohexane	00110-82-7	1.14	1.69	1.917	
Methylcyclopentane	00096-37-7	2.05	1.64	3.370	
3-Methylpentane	00096-14-0	1.69	1.53	2.593	
Methylcyclohexane	00108-87-2	1.56	1.38	2.152	
n-Heptane	00142-82-5	0.97	1.29	1.243	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.24	1.485	
2,4-Dimethylhexane	00589-43-5	1.61	1.18	1.895	
c-2-Butene	00590-18-1	14.26	1.18	16.785	
3-Methyl-t-2-pentene	00616-12-6	11.66	1.12	13.102	
2-Methyl-2-pentene	00625-27-4	11.03	1.08	11.938	
n-Octane	00111-65-9	0.80	1.07	0.849	
2,3-Dimethylpentane	00565-59-3	1.25	1.06	1.326	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.93	2.982	
2-Methylhexane	00591-76-4	1.09	0.85	0.922	
t-2-Hexene	04050-45-7	8.55	0.77	6.582	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.70	8.219	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.63	0.598	
Ethylbenzene	00100-41-4	2.96	0.60	1.785	
2-Methylpropane	00075-28-5	1.18	0.58	0.683	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.50	0.798	
2-Methyl-1-butene	00563-46-2	6.38	0.47	3.005	
c-2-Pentene	00627-20-3	10.28	0.41	4.184	
2,2-Dimethylbutane	00075-83-2	1.11	0.26	0.292	

Vehicle 213b - Fuel 10 psi E10 - Dynamic - Test 25750 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,4-Dimethylpentane	00108-08-7	1.46	0.25	0.372	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.21	1.173	
Indan	00496-11-7	3.23	0.14	0.449	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.13	0.137	
		Total	179.8	839.7	4.669

Vehicle 213b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7429

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	545.98	791.116	
n-Butane	00106-97-8	1.08	196.96	212.113	
2-Methylbutane (Isopentane)	00078-78-4	1.35	188.38	255.236	
Toluene	00108-88-3	3.93	152.43	598.276	
n-Hexane	00110-54-3	1.13	112.72	127.905	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	66.10	92.391	
3-Methylpentane	00096-14-0	1.69	47.30	79.974	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	44.91	53.858	
2-Methyl-2-butene	00513-35-9	14.20	42.05	596.841	
n-Pentane	00109-66-0	1.21	41.19	50.042	
Benzene	00071-43-2	0.69	36.90	25.618	
t-2-Pentene	00646-04-8	10.47	35.47	371.500	
Methylcyclopentane	00096-37-7	2.05	31.20	63.956	
Cyclohexane	00110-82-7	1.14	30.10	34.240	
2,3-Dimethylbutane	00079-29-8	0.90	28.27	25.405	
c-2-Pentene	00627-20-3	10.28	18.47	189.858	
Methylcyclohexane	00108-87-2	1.56	18.04	28.062	
n-Propylbenzene	00103-65-1	1.96	17.85	34.974	
n-Heptane	00142-82-5	0.97	17.59	16.983	
2-Methylhexane	00591-76-4	1.09	17.47	18.958	
2-Methyl-1-butene	00563-46-2	6.38	16.67	106.309	
2,3,4-Trimethylpentane	00565-75-3	0.95	16.34	15.504	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	15.37	49.056	
2,4-Dimethylpentane	00108-08-7	1.46	14.06	20.524	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	13.60	105.486	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	11.73	137.329	
t-2-Hexene	04050-45-7	8.55	10.99	93.957	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	10.21	54.106	
2,3-Dimethylpentane	00565-59-3	1.25	9.55	11.924	
3-Methyl-t-2-pentene	00616-12-6	11.66	9.02	105.173	
2,4-Dimethylhexane	00589-43-5	1.61	8.19	13.147	
2,2-DiMeHexane	00590-73-8	0.94	8.05	7.572	
3-Methyl-c-2-pentene	00922-62-3	12.52	7.86	98.410	
2-Methyl-2-pentene	00625-27-4	11.03	7.65	84.351	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	7.60	40.822	
c-2-Butene	00590-18-1	14.26	7.39	105.363	
1-Methylcyclopentene	00693-89-0	12.45	7.27	90.514	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	7.25	53.551	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	6.85	45.279	
Cyclopentene	00142-29-0	6.69	6.54	43.759	
n-Octane	00111-65-9	0.80	6.43	5.122	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	5.75	45.673	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	5.63	9.044	
2,2,5-Trimethylhexane	03522-94-9	1.05	5.33	5.615	

Vehicle 213b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7429 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,2-Dimethylbutane	00075-83-2	1.11	5.25	5.837	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	4.25	4.640	
ortho-Xylene	00095-47-6	7.58	3.89	29.499	
2-Methylheptane	00592-27-8	0.97	3.84	3.714	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	3.83	16.839	
t-1,2-Dimethylcyclopentane	00822-50-4	2.66	3.59	9.539	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	3.58	20.708	
3-Methylheptane	00589-81-1	1.12	3.34	3.754	
1,3,5-Trimethylbenzene	00108-67-8	11.75	3.19	37.483	
c-1,3-Dimethylcyclopentane	02532-58-3	2.66	3.09	8.205	
Ethylbenzene	00100-41-4	2.96	2.93	8.676	
2,2-Dimethylpentane	00590-35-2	1.04	2.89	3.011	
c-1,3-Dimethylcyclohexane	00638-04-0	2.66	2.51	6.676	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	2.29	12.712	
3,3-Dimethylpentane	00562-49-2	1.12	1.89	2.111	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.70	1.788	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.70	1.900	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	1.66	13.038	
3,5-Dimethylheptane	00926-82-9	1.42	1.46	2.083	
n-Nonane	00111-84-2	0.68	1.42	0.972	
n-Decane	00124-18-5	0.59	1.37	0.810	
t-1,4-Dimethylcyclohexane	02207-04-7	2.66	1.16	3.070	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	1.08	4.182	
Unknown #16		2.66	0.96	2.559	
4-Methyloctane	02216-34-4	0.85	0.96	0.816	
1,3-Butadiene	00106-99-0	12.45	0.93	11.634	
n-Undecane	01120-21-4	0.52	0.90	0.468	
Unknown #8		2.66	0.88	2.338	
Unknown #5		2.66	0.87	2.321	
3,3-Dimethylhexane	00563-16-6	1.15	0.86	0.987	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.84	9.981	
c-2-Heptene	06443-92-1	7.08	0.73	5.167	
Indan	00496-11-7	3.23	0.70	2.274	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.67	6.998	
t-3-Heptene	14686-14-7	6.17	0.64	3.949	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	0.62	4.046	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.62	4.372	
2,4-Dimethylheptane	02213-23-2	1.26	0.58	0.739	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.50	4.182	
3-Methyloctane	02216-33-3	0.88	0.46	0.411	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.45	3.583	
1-Heptene	00592-76-7	4.29	0.42	1.784	

Vehicle 213b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7429 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.66	0.40	1.053	
Unknown #22	.	2.66	0.39	1.028	
1-Nonene	00124-11-8	2.49	0.36	0.903	
Isopropylbenzene (Cumene)	00098-82-8	2.66	0.33	0.868	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.32	2.004	
1,1-Dimethylcyclohexane	00590-66-9	1.12	0.19	0.214	
		Total	1992.2	5290.8	2.656
No MIR available, use weighted average of 2.6557					

Vehicle 213b - Fuel 7 psi E10 - 86°F Static - Test 7464					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	10.30	14.920	
Toluene	00108-88-3	3.93	8.66	33.974	
2-Methylbutane (Isopentane)	00078-78-4	1.35	6.25	8.467	
n-Hexane	00110-54-3	1.13	5.36	6.082	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	3.01	4.211	
n-Butane	00106-97-8	1.08	2.98	3.204	
n-Pentane	00109-66-0	1.21	2.45	2.977	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	2.29	2.743	
3-Methylpentane	00096-14-0	1.69	1.95	3.291	
2-Methyl-2-butene	00513-35-9	14.20	1.79	25.347	
t-2-Pentene	00646-04-8	10.47	1.20	12.564	
Benzene	00071-43-2	0.69	0.44	0.309	
		Total	46.7	118.1	2.531

Vehicle 213b - Fuel 7 psi E10 - 105°F Static - Test 7465					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	44.26	64.134	
Toluene	00108-88-3	3.93	18.17	71.299	
n-Hexane	00110-54-3	1.13	6.19	7.025	
2-Methylbutane (Isopentane)	00078-78-4	1.35	4.46	6.047	
n-Propylbenzene	00103-65-1	1.96	4.44	8.705	
Benzene	00071-43-2	0.69	3.67	2.548	
Ethylene	00074-85-1	8.88	3.37	29.926	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	3.07	4.294	
2-Methyl-2-butene	00513-35-9	14.20	2.71	38.429	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	2.62	3.148	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	2.56	19.822	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	2.46	13.214	
n-Butane	00106-97-8	1.08	2.26	2.439	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	2.26	16.716	
3-Methylpentane	00096-14-0	1.69	2.18	3.679	
t-2-Pentene	00646-04-8	10.47	2.03	21.252	
n-Pentane	00109-66-0	1.21	1.70	2.066	
Cyclohexane	00110-82-7	1.14	1.57	1.786	
n-Heptane	00142-82-5	0.97	1.53	1.473	
Methylcyclohexane	00108-87-2	1.56	1.41	2.200	
2,3-Dimethylbutane	00079-29-8	0.90	1.36	1.226	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.12	4.934	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.11	1.057	
Cyclopentene	00142-29-0	6.69	0.97	6.504	
2,4-Dimethylhexane	00589-43-5	1.61	0.95	1.530	
Methylcyclopentane	00096-37-7	2.05	0.92	1.889	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.90	10.600	
c-2-Pentene	00627-20-3	10.28	0.90	9.260	
2-Methyl-1-butene	00563-46-2	6.38	0.88	5.610	
2,2-DiMeHexane	00590-73-8	0.94	0.83	0.786	
2-Methylhexane	00591-76-4	1.09	0.83	0.901	
Indan	00496-11-7	3.23	0.81	2.610	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.77	4.256	
ortho-Xylene	00095-47-6	7.58	0.74	5.628	
3-Methylheptane	00589-81-1	1.12	0.73	0.823	
t-2-Hexene	04050-45-7	8.55	0.70	5.985	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.69	0.776	
n-Nonane	00111-84-2	0.68	0.68	0.463	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.65	7.710	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.62	1.003	
c-2-Butene	00590-18-1	14.26	0.58	8.304	
2,4-Dimethylpentane	00108-08-7	1.46	0.55	0.805	
n-Octane	00111-65-9	0.80	0.53	0.424	
t-1,2-Dimethylcyclopentane	00822-50-4	3.17	0.52	1.643	

Vehicle 213b - Fuel 7 psi E10 - 105°F Static - Test 7465 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,3-Dimethylpentane	00565-59-3	1.25	0.51	0.643	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.49	5.702	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.47	5.501	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.44	3.509	
2-Methylheptane	00592-27-8	0.97	0.43	0.416	
c-1,3-Dimethylcyclopentane	02532-58-3	3.17	0.42	1.338	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.41	2.182	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.37	2.651	
c-1,3-Dimethylcyclohexane	00638-04-0	3.17	0.36	1.156	
2,2-Dimethylpentane	00590-35-2	1.04	0.36	0.378	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.30	3.802	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.30	0.317	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.30	1.143	
2-Methyl-2-pentene	00625-27-4	11.03	0.29	3.180	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.27	0.294	
Ethylbenzene	00100-41-4	2.96	0.26	0.777	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.22	1.462	
n-Decane	00124-18-5	2.49	0.19	0.479	
2,2-Dimethylbutane	00075-83-2	1.11	0.14	0.151	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.07	0.218	
		Total	138.9	440.2	3.169
No MIR available, use weighted average of 3.1690					

Vehicle 213b - Fuel 7 psi E10 - Dynamic - Test 25754

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	47.19	68.379	
n-Propylbenzene	00103-65-1	1.96	22.51	44.110	
Toluene	00108-88-3	3.93	18.46	72.447	
2-Methylbutane (Isopentane)	00078-78-4	1.35	15.85	21.474	
n-Butane	00106-97-8	1.08	14.36	15.469	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	8.24	44.223	
n-Hexane	00110-54-3	1.13	7.72	8.755	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	6.57	76.868	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	5.85	43.177	
n-Pentane	00109-66-0	1.21	5.52	6.706	
Methylcyclopentane	00096-37-7	2.05	5.03	10.302	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	4.28	5.127	
1,3,5-Trimethylbenzene	00108-67-8	11.75	3.91	45.905	
Benzene	00071-43-2	0.69	3.90	2.708	
3-Methylpentane	00096-14-0	1.69	3.60	6.089	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	3.51	27.847	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	3.45	4.824	
t-2-Butene	00624-64-6	15.20	3.40	51.712	
2-Methyl-2-butene	00513-35-9	14.20	3.36	47.725	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	3.17	13.935	
Methylcyclohexane	00108-87-2	1.56	3.01	4.681	
t-2-Pentene	00646-04-8	10.47	2.95	30.924	
2,3-Dimethylbutane	00079-29-8	0.90	2.83	2.543	
2,3,4-Trimethylpentane	00565-75-3	0.95	2.76	2.617	
Cyclohexane	00110-82-7	1.14	2.51	2.858	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	2.41	18.705	
2-Methylheptane	00592-27-8	0.97	2.36	2.286	
c-2-Pentene	00627-20-3	10.28	2.31	23.709	
Ethylbenzene	00100-41-4	2.96	2.13	6.319	
2,2-DiMeHexane	00590-73-8	0.94	2.10	1.981	
n-Octane	00111-65-9	0.80	2.08	1.656	
n-Nonane	00111-84-2	0.68	1.99	1.361	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.97	6.275	
n-Heptane	00142-82-5	0.97	1.94	1.877	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.92	10.624	
2-Methyl-1-butene	00563-46-2	6.38	1.88	11.960	
2,4-Dimethylpentane	00108-08-7	1.46	1.47	2.152	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	1.47	9.684	
n-Decane	00124-18-5	0.59	1.44	0.849	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.42	1.554	
3-Methyl-c-2-pentene	00922-62-3	12.52	1.40	17.563	
3-Methylheptane	00589-81-1	1.12	1.31	1.477	
ortho-Xylene	00095-47-6	7.58	1.29	9.761	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	1.28	9.098	

Vehicle 213b - Fuel 7 psi E10 - Dynamic - Test 25754 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.28	15.258	
2-Methyl-1,3-butadiene	00078-79-5	10.48	1.21	12.730	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	1.21	1.940	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.16	1.297	
2,2,5-Trimethylhexane	03522-94-9	1.05	1.14	1.196	
2-Methylhexane	00591-76-4	1.09	1.13	1.229	
2,4-Dimethylhexane	00589-43-5	1.61	1.13	1.807	
c-2-Butene	00590-18-1	14.26	1.10	15.662	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.69	8.057	
Cyclopentene	00142-29-0	6.69	0.67	4.479	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.65	3.440	
2-Methyl-2-pentene	00625-27-4	11.03	0.63	6.931	
t-2-Hexene	04050-45-7	8.55	0.46	3.938	
2,3-Dimethylpentane	00565-59-3	1.25	0.38	0.480	
Indan	00496-11-7	3.23	0.26	0.828	
2,2-Dimethylbutane	00075-83-2	1.11	0.15	0.172	
		Total	251.3	879.7	3.500

Vehicle 213b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7473

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	395.89	573.641	
Toluene	00108-88-3	3.93	94.26	369.982	
2-Methylbutane (Isopentane)	00078-78-4	1.35	88.04	119.281	
n-Hexane	00110-54-3	1.13	70.01	79.440	
1,3-Butadiene	00106-99-0	12.45	45.50	566.676	
Unknown #2		3.44	41.56	142.858	
2-Methyl-1-butene	00563-46-2	6.38	37.14	236.925	
1-Methylcyclopentene	00693-89-0	12.45	31.23	388.904	
3-Methylpentane	00096-14-0	1.69	28.27	47.799	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	26.08	31.278	
2-Methyl-2-butene	00513-35-9	14.20	23.92	339.483	
2-Methyl-1,3-butadiene	00078-79-5	10.48	21.51	225.440	
Methylcyclopentane	00096-37-7	2.05	19.90	40.784	
Cyclohexane	00110-82-7	1.14	18.54	21.082	
Cyclopentane	00287-92-3	2.24	18.49	41.375	
2,2-Dimethylpropane	00463-82-1	0.65	12.80	8.272	
Methylcyclohexane	00108-87-2	1.56	11.70	18.206	
3,3-Dimethyl-1-butene	00558-37-2	5.68	11.27	64.059	
2-Methylhexane	00591-76-4	1.09	10.68	11.584	
2,3,4-Trimethylpentane	00565-75-3	0.95	10.31	9.780	
n-Heptane	00142-82-5	0.97	9.67	9.337	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	9.46	30.194	
2,4-Dimethylpentane	00108-08-7	1.46	8.44	12.310	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	7.58	88.759	
t-2-Hexene	04050-45-7	8.55	6.94	59.321	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	6.90	53.491	
2,3-Dimethylpentane	00565-59-3	1.25	5.74	7.167	
2,2-DiMeHexane	00590-73-8	0.94	5.53	5.204	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	5.29	28.010	
2-Methylpropane	00075-28-5	1.18	5.24	6.168	
2,4-Dimethylhexane	00589-43-5	1.61	5.17	8.301	
1-Butyne	00107-00-6	6.05	5.05	30.569	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	4.89	21.466	
3-Methyl-c-2-pentene	00922-62-3	12.52	4.86	60.816	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	4.69	37.221	
n-Octane	00111-65-9	0.80	4.64	3.692	
Cyclopentene	00142-29-0	6.69	4.16	27.845	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	4.15	27.435	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	3.98	6.384	
2-Methyl-2-pentene	00625-27-4	11.03	3.96	43.704	
2,2,5-Trimethylhexane	03522-94-9	1.05	3.43	3.610	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	3.37	18.074	
Propane	00074-98-6	0.46	3.19	1.459	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	2.74	2.989	

Vehicle 213b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7473 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,3,5-Trimethylhexane	01069-53-0	1.12	2.52	2.817	
t-1,2-Dimethylcyclopentane	00822-50-4	3.44	2.33	8.004	
2-Methylheptane	00592-27-8	0.97	2.21	2.137	
3-Methylheptane	00589-81-1	1.12	2.01	2.263	
2,2-Dimethylpentane	00590-35-2	1.04	1.88	1.962	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.81	21.240	
c-1,3-Dimethylcyclopentane	02532-58-3	3.44	1.79	6.154	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	1.73	10.022	
ortho-Xylene	00095-47-6	7.58	1.69	12.769	
c-1,3-Dimethylcyclohexane	00638-04-0	3.44	1.68	5.775	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.47	8.143	
Cyclopentadiene	00542-92-7	6.89	1.44	9.933	
3,3-Dimethylpentane	00562-49-2	1.12	1.42	1.583	
3,5-Dimethylheptane	00926-82-9	1.42	1.38	1.964	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.26	1.333	
Ethylbenzene	00100-41-4	2.96	1.18	3.492	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	1.18	9.231	
n-Decane	00124-18-5	0.59	1.13	0.666	
Unknown #17		3.44	0.97	3.328	
t-2-Nonene	06434-78-2	3.44	0.92	3.150	
4-Isopropyltoluene (p-Cymene)	00099-87-6	4.41	0.85	3.737	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.84	3.260	
4-Methyloctane	02216-34-4	0.85	0.78	0.662	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	0.77	5.697	
t-1,4-Dimethylcyclohexane	02207-04-7	3.44	0.68	2.348	
3,3-Dimethylhexane	00563-16-6	1.15	0.64	0.733	
Unknown #5		3.44	0.63	2.172	
c-2-Heptene	06443-92-1	7.08	0.60	4.229	
1,4-Diethylbenzene	00105-05-5	4.39	0.59	2.596	
Isobutylbenzene	00538-93-2	3.44	0.57	1.966	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	3.44	0.54	1.846	
Unknown #8		3.44	0.50	1.733	
2,4-Dimethylheptane	02213-23-2	1.26	0.47	0.601	
1-Nonene	00124-11-8	2.49	0.40	1.001	
t-3-Heptene	14686-14-7	6.17	0.28	1.727	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.22	1.415	
		Total	1187.5	4082.1	3.438
No MIR available, use weighted average of 3.4375					

Vehicle 213b - Fuel 9 psi E0 - 86°F Static - Test 7506

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	4.25	16.673	
2-Methylbutane (Isopentane)	00078-78-4	1.35	3.29	4.456	
n-Butane	00106-97-8	1.08	3.08	3.312	
Cyclohexane	00110-82-7	1.14	2.13	2.418	
Ethanol	00064-17-5	1.45	1.68	2.437	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.18	5.167	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.09	1.528	
n-Hexane	00110-54-3	1.13	0.97	1.097	
2,3-Dimethylbutane	00079-29-8	0.90	0.88	0.794	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	0.86	1.035	
2-Methyl-2-butene	00513-35-9	14.20	0.79	11.210	
2,4-Dimethylhexane	00589-43-5	1.61	0.68	1.095	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.59	3.258	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	0.56	3.025	
3-Methylpentane	00096-14-0	1.69	0.52	0.878	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.51	5.963	
Benzene	00071-43-2	0.69	0.50	0.345	
c-2-Pentene	00627-20-3	10.28	0.49	5.089	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	0.48	3.687	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.44	0.465	
n-Propylbenzene	00103-65-1	1.96	0.44	0.858	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.44	0.415	
n-Pentane	00109-66-0	1.21	0.42	0.507	
Methylcyclopentane	00096-37-7	2.05	0.42	0.852	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.39	0.432	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	0.38	2.805	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.33	0.355	
c-2-Butene	00590-18-1	14.26	0.31	4.361	
t-2-Hexene	04050-45-7	8.55	0.30	2.583	
t-2-Pentene	00646-04-8	10.47	0.29	3.087	
Methylcyclohexane	00108-87-2	1.56	0.26	0.402	
2-Methyl-1-butene	00563-46-2	6.38	0.24	1.525	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.24	2.768	
ortho-Xylene	00095-47-6	7.58	0.24	1.781	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.23	0.721	
Cyclopentene	00142-29-0	6.69	0.22	1.481	
2,3-Dimethylpentane	00565-59-3	1.25	0.19	0.241	
t-2-Butene	00624-64-6	15.20	0.18	2.704	
2-Methylhexane	00591-76-4	1.09	0.14	0.149	
Ethylbenzene	00100-41-4	2.96	0.10	0.283	
2,4-Dimethylpentane	00108-08-7	1.46	0.04	0.064	
		Total	30.7	102.3	3.329

Vehicle 213b - Fuel 9 psi E0 - 105°F Static - Test 7507					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	9.69	38.049	
n-Propylbenzene	00103-65-1	1.96	7.64	14.968	
n-Butane	00106-97-8	1.08	5.48	5.902	
2-Methylbutane (Isopentane)	00078-78-4	1.35	5.03	6.817	
Cyclohexane	00110-82-7	1.14	4.65	5.285	
3-Methylnonane	05911-04-6	0.66	3.79	2.486	
n-Hexane	00110-54-3	1.13	2.83	3.214	
2,2-DiMeHexane	00590-73-8	0.94	1.76	1.654	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.55	2.169	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.51	1.813	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	1.39	10.230	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	1.31	10.155	
2-Methyl-2-butene	00513-35-9	14.20	1.29	18.309	
Benzene	00071-43-2	0.69	1.26	0.873	
3-Methylpentane	00096-14-0	1.69	1.25	2.112	
t-2-Pentene	00646-04-8	10.47	1.10	11.491	
n-Pentane	00109-66-0	1.21	1.09	1.324	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.99	0.937	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.94	11.016	
Methylcyclopentane	00096-37-7	2.05	0.69	1.405	
c-2-Pentene	00627-20-3	10.28	0.63	6.438	
n-Heptane	00142-82-5	0.97	0.44	0.426	
2-Methylhexane	00591-76-4	1.09	0.43	0.472	
ortho-Xylene	00095-47-6	7.58	0.37	2.828	
t-2-Hexene	04050-45-7	8.55	0.36	3.107	
2-Methyl-1-butene	00563-46-2	6.38	0.34	2.185	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.26	3.088	
2,4-Dimethylpentane	00108-08-7	1.46	0.23	0.340	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.18	2.114	
2,3-Dimethylpentane	00565-59-3	1.25	0.14	0.172	
c-2-Butene	00590-18-1	14.26	0.10	1.450	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.04	0.135	
		Total	58.8	173.0	2.943

Vehicle 213b - Fuel 9 psi E0 - Dynamic - Test 25764

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Cyclohexane	00110-82-7	1.14	10.76	12.234	
Toluene	00108-88-3	3.93	9.38	36.829	
n-Hexane	00110-54-3	1.13	5.02	5.696	
2-Methylbutane (Isopentane)	00078-78-4	1.35	4.78	6.470	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	4.64	5.565	
2,2,5-Trimethylhexane	03522-94-9	1.05	3.99	4.205	
Methane	00074-82-8	0.01	3.99	0.055	
2,3,5-Trimethylhexane	01069-53-0	1.12	3.95	4.424	
Benzene	00071-43-2	0.69	3.77	2.620	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	3.75	27.705	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	3.58	27.777	
t-2-Pentene	00646-04-8	10.47	3.17	33.177	
n-Butane	00106-97-8	1.08	3.15	3.387	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	2.95	4.126	
Ethylbenzene	00100-41-4	2.96	2.90	8.585	
2,3,4-Trimethylpentane	00565-75-3	0.95	2.71	2.572	
Ethanol	00064-17-5	1.45	2.38	3.441	
2,2-DiMeHexane	00590-73-8	0.94	2.24	2.110	
2,4-Dimethylpentane	00108-08-7	1.46	2.15	3.135	
Methylcyclopentane	00096-37-7	2.05	2.15	4.401	
t-2-Hexene	04050-45-7	8.55	2.00	17.095	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.88	14.920	
n-Pentane	00109-66-0	1.21	1.79	2.169	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.58	8.739	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	1.55	8.339	
2-Methyl-2-butene	00513-35-9	14.20	1.54	21.867	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.48	4.730	
3-Methyl-t-2-pentene	00616-12-6	11.66	1.45	16.934	
Methylcyclohexane	00108-87-2	1.56	1.36	2.113	
2,3-Dimethylpentane	00565-59-3	1.25	1.18	1.475	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.15	5.039	
n-Heptane	00142-82-5	0.97	0.97	0.934	
ortho-Xylene	00095-47-6	7.58	0.46	3.474	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.42	4.898	
2-Methyl-1-butene	00563-46-2	6.38	0.39	2.491	
2-Methylhexane	00591-76-4	1.09	0.39	0.420	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.36	0.572	
2,3-Dimethylbutane	00079-29-8	0.90	0.04	0.039	
		Total	101.4	314.8	3.105

Vehicle 213b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7516					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	137.80	148.404	
2-Methylbutane (Isopentane)	00078-78-4	1.35	122.64	166.167	
Toluene	00108-88-3	3.93	78.85	309.495	
Cyclohexane	00110-82-7	1.14	72.52	82.482	
Ethanol	00064-17-5	1.45	44.76	64.855	
n-Hexane	00110-54-3	1.13	43.02	48.814	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	33.34	46.607	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	26.47	31.744	
3-Methylpentane	00096-14-0	1.69	22.16	37.466	
Benzene	00071-43-2	0.69	19.39	13.466	
n-Pentane	00109-66-0	1.21	18.25	22.172	
2-Methyl-2-butene	00513-35-9	14.20	17.16	243.526	
2,3-Dimethylbutane	00079-29-8	0.90	16.32	14.665	
Methylcyclopentane	00096-37-7	2.05	15.20	31.158	
t-2-Pentene	00646-04-8	10.47	14.13	148.012	
2,3,4-Trimethylpentane	00565-75-3	0.95	10.22	9.699	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	8.44	65.490	
2,4-Dimethylpentane	00108-08-7	1.46	8.30	12.111	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	7.88	58.216	
2-Methylhexane	00591-76-4	1.09	7.73	8.392	
2,2-DiMeHexane	00590-73-8	0.94	7.32	6.894	
2-Methyl-1-butene	00563-46-2	6.38	7.03	44.865	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	7.01	22.361	
c-2-Pentene	00627-20-3	10.28	6.77	69.601	
2,3-Dimethylpentane	00565-59-3	1.25	6.08	7.595	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	4.80	56.150	
2,4-Dimethylhexane	00589-43-5	1.61	4.79	7.698	
t-2-Hexene	04050-45-7	8.55	4.70	40.186	
3-Methyl-t-2-pentene	00616-12-6	11.66	4.53	52.798	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	4.41	34.991	
3-Methyl-c-2-pentene	00922-62-3	12.52	4.19	52.429	
n-Heptane	00142-82-5	0.97	4.12	3.978	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	4.12	6.610	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	3.91	20.696	
2,2,5-Trimethylhexane	03522-94-9	1.05	3.48	3.664	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	3.31	17.751	
2-Methyl-2-pentene	00625-27-4	11.03	3.30	36.401	
Cyclopentene	00142-29-0	6.69	3.26	21.774	
1-Methylcyclopentene	00693-89-0	12.45	3.11	38.790	
Methylcyclohexane	00108-87-2	1.56	3.10	4.829	
c-2-Butene	00590-18-1	14.26	3.02	43.106	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	3.01	19.864	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	2.51	2.740	
ortho-Xylene	00095-47-6	7.58	2.24	16.957	

Vehicle 213b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7516 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethylbenzene	00100-41-4	2.96	1.81	5.362	
t-1,2-Dimethylcyclopentane	00822-50-4	2.68	1.75	4.696	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.70	7.485	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.69	1.888	
c-1,3-Dimethylcyclopentane	02532-58-3	2.68	1.62	4.325	
2,2-Dimethylbutane	00075-83-2	1.11	1.53	1.698	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	1.49	8.626	
Propane	00074-98-6	0.46	1.42	0.648	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.34	7.434	
3-Methylheptane	00589-81-1	1.12	1.33	1.490	
2-Methylheptane	00592-27-8	0.97	1.21	1.166	
2,2-Dimethylpentane	00590-35-2	1.04	1.18	1.236	
c-1,3-Dimethylcyclohexane	00638-04-0	2.68	1.18	3.171	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.17	13.745	
n-Octane	00111-65-9	0.80	1.12	0.895	
2-Methylpropane	00075-28-5	1.18	1.10	1.292	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.03	1.086	
3,3-Dimethylpentane	00562-49-2	1.12	0.86	0.961	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.86	6.732	
c-2-Heptene	06443-92-1	7.08	0.73	5.139	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.62	7.440	
Unknown #5		2.68	0.52	1.400	
t-3-Heptene	14686-14-7	6.17	0.52	3.219	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.49	3.951	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.43	1.658	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.34	3.568	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.30	2.155	
2,4-Dimethylheptane	02213-23-2	1.26	0.28	0.356	
Methane	00074-82-8	0.01	0.25	0.003	
		Total	858.6	2298.5	2.677
No MIR available, use weighted average of 2.6770					

Vehicle 213b - Fuel 7 psi E0 - 86°F Static - Test 7526					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Propylbenzene	00103-65-1	1.96	4.66	9.129	
n-Butane	00106-97-8	1.08	4.48	4.821	
Ethanol	00064-17-5	1.45	3.43	4.964	
Toluene	00108-88-3	3.93	3.30	12.936	
2-Methylbutane (Isopentane)	00078-78-4	1.35	2.46	3.328	
Cyclohexane	00110-82-7	1.14	1.90	2.160	
n-Hexane	00110-54-3	1.13	1.25	1.414	
Benzene	00071-43-2	0.69	1.08	0.751	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	0.94	1.320	
Methylcyclopentane	00096-37-7	2.05	0.90	1.847	
2,3-Dimethylbutane	00079-29-8	0.90	0.87	0.780	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	0.86	6.636	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.76	0.834	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.70	4.642	
2-Methyl-2-butene	00513-35-9	14.20	0.55	7.769	
t-2-Hexene	04050-45-7	8.55	0.54	4.631	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.48	2.113	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.46	5.429	
Indan	00496-11-7	3.23	0.45	1.453	
2,4-Dimethylpentane	00108-08-7	1.46	0.45	0.655	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	0.44	2.354	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	0.38	0.455	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.37	4.633	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.36	0.405	
2-Methyl-1-butene	00563-46-2	6.38	0.36	2.292	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.36	0.338	
c-2-Pentene	00627-20-3	10.28	0.31	3.183	
c-2-Butene	00590-18-1	14.26	0.27	3.862	
n-Pentane	00109-66-0	1.21	0.27	0.325	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.27	0.429	
Ethylbenzene	00100-41-4	2.96	0.22	0.656	
2-Methylhexane	00591-76-4	1.09	0.22	0.238	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.21	2.505	
Cyclopentene	00142-29-0	6.69	0.19	1.293	
t-2-Pentene	00646-04-8	10.47	0.19	1.969	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.17	0.542	
ortho-Xylene	00095-47-6	7.58	0.10	0.752	
2,3-Dimethylpentane	00565-59-3	1.25	0.09	0.109	
		Total	35.3	104.0	2.947

Vehicle 213b - Fuel 7 psi E0 - 105°F Static - Test 7528

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	9.49	37.259	
2-Methylbutane (Isopentane)	00078-78-4	1.35	6.08	8.236	
Cyclohexane	00110-82-7	1.14	5.90	6.710	
n-Butane	00106-97-8	1.08	5.83	6.273	
Ethanol	00064-17-5	1.45	4.29	6.213	
n-Hexane	00110-54-3	1.13	3.00	3.407	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	2.47	3.453	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	2.11	2.533	
Benzene	00071-43-2	0.69	2.09	1.454	
2-Methyl-2-butene	00513-35-9	14.20	1.84	26.133	
Methylcyclopentane	00096-37-7	2.05	1.71	3.507	
3-Methyl-c-2-pentene	00922-62-3	12.52	1.63	20.410	
2,3-Dimethylbutane	00079-29-8	0.90	1.61	1.446	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	1.55	12.007	
3-Methylpentane	00096-14-0	1.69	1.54	2.599	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	1.22	6.570	
t-2-Pentene	00646-04-8	10.47	1.15	12.044	
n-Pentane	00109-66-0	1.21	1.13	1.375	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.11	1.057	
ortho-Xylene	00095-47-6	7.58	0.98	7.435	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.89	10.685	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.86	10.162	
2,4-Dimethylpentane	00108-08-7	1.46	0.84	1.230	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.79	3.451	
c-2-Pentene	00627-20-3	10.28	0.78	8.015	
Ethylbenzene	00100-41-4	2.96	0.76	2.250	
t-2-Hexene	04050-45-7	8.55	0.65	5.594	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.65	3.576	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.64	0.700	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.62	7.254	
2-Methyl-1-butene	00563-46-2	6.38	0.51	3.280	
2-Methylhexane	00591-76-4	1.09	0.51	0.553	
2,2-DiMeHexane	00590-73-8	0.94	0.46	0.437	
2,3-Dimethylpentane	00565-59-3	1.25	0.43	0.540	
2-Methyl-2-pentene	00625-27-4	11.03	0.42	4.675	
Cyclopentene	00142-29-0	6.69	0.41	2.729	
Methylcyclohexane	00108-87-2	1.56	0.40	0.620	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.39	2.587	
n-Heptane	00142-82-5	0.97	0.36	0.352	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.36	4.181	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.33	0.367	
c-2-Butene	00590-18-1	14.26	0.30	4.335	
2-Methylheptane	00592-27-8	0.97	0.27	0.264	
2,4-Dimethylhexane	00589-43-5	1.61	0.27	0.437	

Vehicle 213b - Fuel 7 psi E0 - 105°F Static - Test 7528 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.27	1.421	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.26	0.269	
n-Propylbenzene	00103-65-1	1.96	0.25	0.489	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.23	0.734	
2,2-Dimethylbutane	00075-83-2	1.11	0.16	0.176	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.15	0.240	
		Total	71.0	251.7	3.546

Vehicle 213b - Fuel 7 psi E0 - Dynamic - Test 25769					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Propylbenzene	00103-65-1	1.96	11.71	22.952	
Toluene	00108-88-3	3.93	9.41	36.935	
n-Butane	00106-97-8	1.08	7.85	8.449	
2-Methylbutane (Isopentane)	00078-78-4	1.35	7.14	9.672	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	3.94	21.177	
n-Hexane	00110-54-3	1.13	3.84	4.352	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	2.80	20.688	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	2.76	32.264	
n-Pentane	00109-66-0	1.21	2.64	3.209	
Methylcyclopentane	00096-37-7	2.05	2.27	4.653	
Benzene	00071-43-2	0.69	2.10	1.460	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.96	2.346	
t-2-Butene	00624-64-6	15.20	1.84	27.977	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.78	20.918	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.69	2.357	
3-Methylpentane	00096-14-0	1.69	1.58	2.665	
2,3-Dimethylbutane	00079-29-8	0.90	1.53	1.376	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.52	12.081	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.48	6.521	
2-Methyl-2-butene	00513-35-9	14.20	1.46	20.689	
Methylcyclohexane	00108-87-2	1.56	1.29	2.005	
t-2-Pentene	00646-04-8	10.47	1.19	12.424	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.11	1.049	
Cyclohexane	00110-82-7	1.14	1.08	1.228	
Ethylbenzene	00100-41-4	2.96	1.08	3.194	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	1.02	7.946	
n-Octane	00111-65-9	0.80	1.02	0.813	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.00	3.205	
n-Heptane	00142-82-5	0.97	1.00	0.965	
2-Methylheptane	00592-27-8	0.97	0.96	0.926	
c-2-Pentene	00627-20-3	10.28	0.94	9.631	
2-Methyl-1-butene	00563-46-2	6.38	0.89	5.655	
2,2-DiMeHexane	00590-73-8	0.94	0.86	0.811	
n-Nonane	00111-84-2	0.68	0.82	0.558	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.79	4.358	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.78	5.147	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.75	9.435	
n-Decane	00124-18-5	0.59	0.74	0.440	
3-Methylheptane	00589-81-1	1.12	0.69	0.773	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.65	4.618	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.64	1.023	
2,4-Dimethylpentane	00108-08-7	1.46	0.64	0.928	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.63	7.550	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.62	0.675	

Vehicle 213b - Fuel 7 psi E0 - Dynamic - Test 25769 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,4-Dimethylhexane	00589-43-5	1.61	0.61	0.984	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.61	0.679	
ortho-Xylene	00095-47-6	7.58	0.54	4.120	
c-2-Butene	00590-18-1	14.26	0.52	7.407	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.51	5.337	
2-Methylhexane	00591-76-4	1.09	0.50	0.541	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.49	0.515	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.35	4.110	
2-Methyl-2-pentene	00625-27-4	11.03	0.29	3.219	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.29	1.528	
Cyclopentene	00142-29-0	6.69	0.29	1.924	
t-2-Hexene	04050-45-7	8.55	0.23	1.967	
2,3-Dimethylpentane	00565-59-3	1.25	0.21	0.262	
Indan	00496-11-7	3.23	0.11	0.345	
2,2-Dimethylbutane	00075-83-2	1.11	0.08	0.092	
		Total	98.1	381.1	3.885

Vehicle 213b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7538					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	127.04	172.118	
Toluene	00108-88-3	3.93	123.83	486.039	
Cyclohexane	00110-82-7	1.14	79.53	90.453	
n-Butane	00106-97-8	1.08	74.55	80.280	
n-Hexane	00110-54-3	1.13	43.71	49.595	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	34.55	48.288	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	28.63	34.327	
3-Methylpentane	00096-14-0	1.69	23.32	39.423	
Ethanol	00064-17-5	1.45	22.08	31.989	
Benzene	00071-43-2	0.69	20.03	13.907	
n-Pentane	00109-66-0	1.21	18.79	22.825	
2-Methyl-2-butene	00513-35-9	14.20	17.74	251.830	
2,3-Dimethylbutane	00079-29-8	0.90	17.30	15.547	
Methylcyclopentane	00096-37-7	2.05	15.61	31.988	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	14.87	115.305	
t-2-Pentene	00646-04-8	10.47	14.54	152.271	
2,3,4-Trimethylpentane	00565-75-3	0.95	11.41	10.825	
Ethylbenzene	00100-41-4	2.96	7.97	23.619	
2,4-Dimethylpentane	00108-08-7	1.46	7.96	11.622	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	7.62	56.265	
2-Methylhexane	00591-76-4	1.09	7.54	8.184	
c-2-Pentene	00627-20-3	10.28	7.23	74.294	
2-Methyl-1-butene	00563-46-2	6.38	6.98	44.505	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	6.60	21.056	
2,3-Dimethylpentane	00565-59-3	1.25	6.36	7.943	
2,2-DiMeHexane	00590-73-8	0.94	6.30	5.930	
2,4-Dimethylhexane	00589-43-5	1.61	5.52	8.857	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	5.43	29.166	
t-2-Hexene	04050-45-7	8.55	5.41	46.249	
3-Methyl-c-2-pentene	00922-62-3	12.52	5.37	67.261	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	4.86	56.897	
3-Methyl-t-2-pentene	00616-12-6	11.66	4.61	53.718	
2,2,5-Trimethylhexane	03522-94-9	1.05	4.57	4.811	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	4.46	7.153	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	4.42	23.438	
ortho-Xylene	00095-47-6	7.58	4.13	31.305	
n-Heptane	00142-82-5	0.97	3.89	3.759	
1-Methylcyclopentene	00693-89-0	12.45	3.46	43.139	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	3.37	26.789	
c-2-Butene	00590-18-1	14.26	3.33	47.422	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	3.25	3.554	
2-Methyl-2-pentene	00625-27-4	11.03	3.23	35.603	
Cyclopentene	00142-29-0	6.69	3.13	20.938	
1,3,5-Trimethylbenzene	00108-67-8	11.75	3.08	36.198	

Vehicle 213b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7538 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	2.88	18.998	
2,2-Dimethylbutane	00075-83-2	1.11	2.55	2.836	
Methylcyclohexane	00108-87-2	1.56	2.53	3.936	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.28	10.024	
t-1,2-Dimethylcyclopentane	00822-50-4	2.98	2.08	6.186	
c-1,3-Dimethylcyclopentane	02532-58-3	2.98	1.73	5.138	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.56	8.648	
n-Propylbenzene	00103-65-1	1.96	1.41	2.767	
2-Methylheptane	00592-27-8	0.97	1.38	1.339	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.19	14.151	
2,2-Dimethylpentane	00590-35-2	1.04	1.14	1.184	
3-Methylheptane	00589-81-1	1.12	1.05	1.183	
Styrene	00100-42-5	1.66	1.05	1.742	
n-Octane	00111-65-9	0.80	0.92	0.729	
3,3-Dimethylpentane	00562-49-2	1.12	0.90	1.007	
Unknown #16		2.98	0.89	2.662	
c-2-Heptene	06443-92-1	7.08	0.88	6.247	
2-Methylpropane	00075-28-5	1.18	0.86	1.008	
Methane	00074-82-8	0.01	0.75	0.010	
1c-2t-3-TriMeCyPentane	15890-40-1	2.98	0.72	2.141	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.71	5.590	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	0.71	4.094	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.70	0.780	
Unknown #5		2.98	0.69	2.056	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.64	2.485	
2,2,3-Trimethylbutane	00464-06-2	1.05	0.58	0.615	
c-1,3-Dimethylcyclohexane	00638-04-0	2.98	0.49	1.466	
2,4-Dimethylheptane	02213-23-2	1.26	0.48	0.612	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.44	3.544	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.43	3.053	
t-3-Heptene	14686-14-7	6.17	0.38	2.375	
1-Nonene	00124-11-8	2.49	0.38	0.938	
Unknown #1		2.98	0.36	1.062	
Unknown #3		2.98	0.27	0.812	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.26	2.754	
Isopropylbenzene (Cumene)	00098-82-8	2.98	0.19	0.572	
		Total	864.0	2571.4	2.976
No MIR available, use weighted average of 2.9760					

Vehicle 220b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7537	21249.9	91.1	19364.6	45551.4	2.352	87
Static	E10 - 7 psi	7564	11657.5	81.0	9442.0	28464.0	3.015	96
	E0 - 9 psi	7644	24378.7	96.6	23556.0	50039.7	2.124	93
	E0 - 7 psi	7677	14347.6	99.7	14299.8	35390.0	2.475	114
105° F	E10 - 10 psi	7541	36851.0	78.1	28779.5	70524.0	2.450	105
Static	E10 - 7 psi	7565	24424.1	91.8	22427.0	66555.4	2.968	127
	E0 - 9 psi	7647	44422.3	90.3	40098.4	88163.2	2.199	108
	E0 - 7 psi	7680	25952.5	105.4	27348.3	68042.1	2.488	120
Dynamic	E10 - 10 psi	25774	180.3	74.0	133.5	501.4	3.756	45
	E10 - 7 psi	25781	685.5	64.2	440.2	1445.3	3.283	69
	E0 - 9 psi	25789	2388.4	99.7	2380.7	6653.4	2.795	55
	E0 - 7 psi	25794	3527.7	104.6	3689.9	12792.2	3.467	114
DHB	E10 - 10 psi	7546	5251.6	91.5	4805.1	12517.4	2.605	107
Total	E10 - 7 psi	7569	4272.9	91.7	3916.7	11477.1	2.930	125
	E0 - 9 psi	7657	19668.0	103.4	20327.8	49439.0	2.432	128
	E0 - 7 psi	7686	19475.3	103.9	20242.7	51559.2	2.547	134

Vehicle 220b - Fuel 10 psi E10 - 86°F Static - Test 7537

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	7504.66	8081.860	
2-Methylbutane (Isopentane)	00078-78-4	1.35	3577.47	4847.069	
n-Hexane	00110-54-3	1.13	1212.40	1375.686	
Ethanol	00064-17-5	1.45	782.86	1134.340	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	696.54	973.617	
n-Pentane	00109-66-0	1.21	552.04	670.690	
3-Methylpentane	00096-14-0	1.69	486.85	823.208	
2-Methyl-2-butene	00513-35-9	14.20	461.55	6551.700	
t-2-Pentene	00646-04-8	10.47	380.13	3981.302	
Toluene	00108-88-3	3.93	347.37	1363.432	
2,3-Dimethylbutane	00079-29-8	0.90	326.18	293.136	
2-Methyl-1-butene	00563-46-2	6.38	269.35	1718.089	
Methylcyclopentane	00096-37-7	2.05	230.99	473.483	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	229.49	275.190	
c-2-Pentene	00627-20-3	10.28	206.83	2126.466	
Cyclohexane	00110-82-7	1.14	203.89	231.897	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	160.56	1879.309	
c-2-Butene	00590-18-1	14.26	147.02	2096.413	
Benzene	00071-43-2	0.69	127.10	88.252	
2,4-Dimethylpentane	00108-08-7	1.46	99.66	145.434	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	94.87	753.371	
2-Methylhexane	00591-76-4	1.09	81.35	88.280	
2-Methylpropane	00075-28-5	1.18	80.49	94.701	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	68.36	362.204	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	68.07	217.192	
Methylcyclohexane	00108-87-2	1.56	66.82	103.924	
t-2-Hexene	04050-45-7	8.55	64.95	555.280	
Cyclopentene	00142-29-0	6.69	59.41	397.197	
2,3,4-Trimethylpentane	00565-75-3	0.95	56.98	54.068	
3-Methyl-t-2-pentene	00616-12-6	11.66	53.80	627.284	
2-Methyl-2-pentene	00625-27-4	11.03	51.40	567.109	
2,3-Dimethylpentane	00565-59-3	1.25	49.74	62.087	
n-Heptane	00142-82-5	0.97	49.68	47.976	
3-Methyl-c-2-pentene	00922-62-3	12.52	45.23	566.173	
2,2-Dimethylbutane	00075-83-2	1.11	40.40	44.893	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	39.21	259.025	
1-Methylcyclopentene	00693-89-0	12.45	34.02	423.682	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	32.91	190.139	
2,4-Dimethylhexane	00589-43-5	1.61	28.80	46.238	
2,2-Dimethylpentane	00590-35-2	1.04	25.61	26.714	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	20.29	157.349	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	19.83	31.830	
c-1,3-Dimethylcyclopentane	02532-58-3	2.35	16.89	39.737	
t-1,2-Dimethylcyclopentane	00822-50-4	2.35	16.30	38.334	

Vehicle 220b - Fuel 10 psi E10 - 86°F Static - Test 7537 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	14.61	107.883	
2,2,5-Trimethylhexane	03522-94-9	1.05	13.82	14.551	
2,2,3-Trimethylbutane	00464-06-2	1.05	12.76	13.445	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	12.18	13.306	
n-Octane	00111-65-9	0.80	12.18	9.697	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	10.86	58.288	
3,3-Dimethylpentane	00562-49-2	1.12	10.21	11.425	
Propane	00074-98-6	0.46	10.13	4.631	
2-Methylheptane	00592-27-8	0.97	9.25	8.945	
3-Methylheptane	00589-81-1	1.12	8.21	9.232	
ortho-Xylene	00095-47-6	7.58	6.03	45.711	
c-1,3-Dimethylcyclohexane	00638-04-0	2.35	5.99	14.085	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	5.53	24.279	
2-Methyl-1,3-butadiene	00078-79-5	10.48	4.75	49.801	
1,3,5-Trimethylbenzene	00108-67-8	11.75	4.72	55.535	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	4.57	35.840	
Ethylbenzene	00100-41-4	2.96	3.93	11.646	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	3.66	20.279	
Unknown #5		2.35	3.52	8.281	
n-Propylbenzene	00103-65-1	1.96	2.73	5.354	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	2.70	10.414	
3,5-Dimethylheptane	00926-82-9	1.42	2.58	3.679	
t-1,4-Dimethylcyclohexane	02207-04-7	2.35	2.48	5.843	
Cyclopentadiene	00542-92-7	6.89	2.28	15.738	
3,3-Dimethylhexane	00563-16-6	1.15	2.28	2.623	
2,3,5-Trimethylhexane	01069-53-0	1.12	2.28	2.551	
c-2-Heptene	06443-92-1	7.08	2.07	14.615	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.35	1.90	4.463	
t-3-Heptene	14686-14-7	6.17	1.84	11.381	
4-Methyloctane	02216-34-4	0.85	1.84	1.558	
Unknown #3		2.35	1.53	3.602	
1,1-Dimethylcyclohexane	00590-66-9	1.12	1.50	1.669	
1-Heptene	00592-76-7	4.29	1.41	6.061	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.29	15.436	
n-Nonane	00111-84-2	0.68	1.27	0.870	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	1.16	7.601	
Indan	00496-11-7	3.23	1.06	3.434	
Unknown #8		2.35	1.11	2.605	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.98	8.232	
1,3-Butadiene	00106-99-0	12.45	0.95	11.792	

Vehicle 220b - Fuel 10 psi E10 - 86°F Static - Test 7537 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Isopropylbenzene (Cumene)	00098-82-8	2.35	0.76	1.786	
1-Nonene	00124-11-8	2.49	0.73	1.828	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	0.61	6.001	
		Total	19364.6	45551.4	2.352
No MIR available, use weighted average of 2.3523					

Vehicle 220b - Fuel 10 psi E10 - 105°F Static - Test 7541

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	10042.39	10814.781	
2-Methylbutane (Isopentane)	00078-78-4	1.35	5140.76	6965.156	
Ethanol	00064-17-5	1.45	2480.02	3593.485	
n-Hexane	00110-54-3	1.13	1267.24	1437.910	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1087.54	1520.153	
n-Pentane	00109-66-0	1.21	817.11	992.732	
3-Methylpentane	00096-14-0	1.69	765.94	1295.108	
2-Methyl-2-butene	00513-35-9	14.20	693.03	9837.500	
Toluene	00108-88-3	3.93	600.67	2357.643	
t-2-Pentene	00646-04-8	10.47	566.37	5931.860	
Unknown #2		2.45	522.26	1279.801	
2-Methyl-1-butene	00563-46-2	6.38	394.85	2518.552	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	392.14	470.220	
Methylcyclopentane	00096-37-7	2.05	371.24	760.965	
Cyclohexane	00110-82-7	1.14	325.07	369.721	
c-2-Pentene	00627-20-3	10.28	307.85	3165.135	
Benzene	00071-43-2	0.69	261.49	181.568	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	233.60	2734.151	
c-2-Butene	00590-18-1	14.26	201.08	2867.390	
2,4-Dimethylpentane	00108-08-7	1.46	162.60	237.280	
2-Methylhexane	00591-76-4	1.09	136.61	148.251	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	11.57	124.96	1446.257	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	117.89	742.952	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	116.95	373.180	
2-Methylpropane	00075-28-5	1.18	108.99	128.237	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	106.17	562.535	
t-2-Hexene	04050-45-7	8.55	104.25	891.181	
2,3,3-Trimethylpentane	00560-21-4	0.95	101.38	95.875	
Cyclopentene	00142-29-0	6.69	89.79	600.341	
3-Methyl-t-2-pentene	00616-12-6	11.66	86.47	1008.195	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	86.47	677.498	
2,3-Dimethylpentane	00565-59-3	1.25	83.74	104.538	
2-Methyl-2-pentene	00625-27-4	11.03	81.66	900.965	
3-Methyl-c-2-pentene	00922-62-3	12.52	72.79	911.149	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	62.18	410.779	
2,2-Dimethylbutane	00075-83-2	1.11	60.00	66.675	
2,4-Dimethylhexane	00589-43-5	1.61	50.58	81.214	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	50.28	290.496	
2,2-Dimethylpentane	00590-35-2	1.04	41.61	43.399	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	37.40	290.019	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	36.11	57.969	
t-1,2-Dimethylcyclopentane	00822-50-4	2.45	26.43	64.767	
1-Octene	00111-66-0	3.14	25.94	81.498	
n-Octane	00111-65-9	0.80	23.96	19.078	

Vehicle 220b - Fuel 10 psi E10 - 105°F Static - Test 7541 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
c-1,3-Dimethylcyclopentane	02532-58-3	2.45	21.80	53.413	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	21.45	23.422	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	20.78	111.546	
2,2,3-Trimethylbutane	00464-06-2	1.05	20.40	21.497	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	19.80	146.249	
3,3-Dimethylpentane	00562-49-2	1.12	17.86	19.980	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	15.75	60.864	
3-Methylheptane	00589-81-1	1.12	13.90	15.632	
Propane	00074-98-6	0.46	12.19	5.574	
ortho-Xylene	00095-47-6	7.58	10.98	83.193	
t-1,4-Dimethylcyclohexane	02207-04-7	2.45	10.73	26.306	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	9.65	42.401	
1,3,5-Trimethylbenzene	00108-67-8	11.75	8.40	98.793	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	7.15	39.641	
2-Methyl-1,3-butadiene	00078-79-5	10.48	6.95	72.810	
Ethylbenzene	00100-41-4	2.96	6.94	20.556	
3,5-Dimethylheptane	00926-82-9	1.42	6.52	9.276	
1-Methylcyclopentene	00693-89-0	12.45	5.20	64.751	
n-Propylbenzene	00103-65-1	1.96	5.04	9.868	
Unknown #5		2.45	4.36	10.676	
3,3-Dimethylhexane	00563-16-6	1.15	4.30	4.953	
c-2-Heptene	06443-92-1	7.08	3.54	25.084	
2,3,5-Trimethylhexane	01069-53-0	1.12	3.23	3.617	
1,2,3-Trimethylbenzene	00526-73-8	11.94	3.00	35.865	
t-3-Heptene	14686-14-7	6.17	2.91	17.948	
1,1-Dimethylcyclohexane	00590-66-9	1.12	2.75	3.071	
4-Methyloctane	02216-34-4	0.85	2.75	2.332	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.45	2.74	6.710	
n-Nonane	00111-84-2	0.68	2.67	1.825	
Cyclopentadiene	00542-92-7	6.89	2.65	18.246	
Unknown #8		2.45	2.58	6.333	
2,4-Dimethylheptane	02213-23-2	1.26	2.13	2.699	
Unknown #16		2.45	1.95	4.785	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	1.93	12.615	
3-Methyloctane	02216-33-3	0.88	1.93	1.704	
Unknown #3		2.45	1.89	4.638	
Unknown #13		2.45	1.82	4.448	
1-Heptene	00592-76-7	4.29	1.71	7.327	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	1.66	1.415	
t-4-Octene	14850-23-8	4.69	1.62	7.615	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	1.62	13.589	
Isopropylbenzene (Cumene)	00098-82-8	2.45	1.43	3.504	

Vehicle 220b - Fuel 10 psi E10 - 105°F Static - Test 7541 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1,3-Butadiene	00106-99-0	12.45	1.42	17.743	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	1.36	9.664	
1-Nonene	00124-11-8	2.49	1.33	3.326	
Unknown #9		2.45	1.17	2.861	
Indan	00496-11-7	3.23	1.07	3.455	
1,4-Diethylbenzene	00105-05-5	4.39	0.99	4.351	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	0.88	8.637	
n-Decane	00124-18-5	0.59	0.82	0.483	
2-Methylheptane	00592-27-8	0.97	0.71	0.684	
1-Butyne	00107-00-6	6.05	0.70	4.251	
2,2-Dimethyloctane	15869-87-1	0.76	0.59	0.444	
c-2-Octene	07642-04-8	2.45	0.55	1.352	
c- & t-4-Nonene	02198-23-4	4.42	0.52	2.293	
Unknown #7		2.45	0.51	1.261	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.49	3.688	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	0.48	0.571	
t-2-Nonene	06434-78-2	2.45	0.48	1.165	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.47	1.798	
sec-Butylbenzene	00135-98-8	2.29	0.44	1.019	
		Total	28779.5	70524.0	2.450
No MIR available, use weighted average of 2.4505					

Vehicle 220b - Fuel 10 psi E10 - Dynamic - Test 25774

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	20.69	81.203	
n-Hexane	00110-54-3	1.13	15.30	17.365	
Ethanol	00064-17-5	1.45	8.67	12.564	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	7.36	39.529	
2,3,3-Trimethylpentane	00560-21-4	0.95	6.54	6.186	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	6.16	7.382	
Unknown #2		3.76	5.52	20.733	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	4.69	20.624	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	4.34	33.634	
1,3,5-Trimethylbenzene	00108-67-8	11.75	4.26	50.132	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	3.92	30.725	
Unknown #23		3.76	3.61	13.563	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	3.39	21.348	
1-Octene	00111-66-0	3.14	2.87	9.017	
Benzene	00071-43-2	0.69	2.23	1.546	
Cyclohexane	00110-82-7	1.14	2.16	2.459	
3-Methylheptane	00589-81-1	1.12	2.01	2.256	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.88	2.048	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.81	21.618	
2,4-Dimethylhexane	00589-43-5	1.61	1.76	2.818	
ortho-Xylene	00095-47-6	7.58	1.69	12.817	
2-Methyl-2-butene	00513-35-9	14.20	1.60	22.727	
n-Propylbenzene	00103-65-1	1.96	1.54	3.011	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.50	8.318	
3-Methylpentane	00096-14-0	1.69	1.42	2.398	
n-Butane	00106-97-8	1.08	1.39	1.496	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	1.30	2.080	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.29	1.802	
2-Methylhexane	00591-76-4	1.09	1.18	1.279	
Ethylbenzene	00100-41-4	2.96	1.14	3.363	
t-2-Pentene	00646-04-8	10.47	1.13	11.783	
Methylcyclopentane	00096-37-7	2.05	1.07	2.194	
Methane	00074-82-8	0.01	0.99	0.014	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.94	3.008	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.94	3.622	
2,4-Dimethylpentane	00108-08-7	1.46	0.86	1.251	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.84	10.510	
n-Octane	00111-65-9	0.80	0.81	0.642	
2,3-Dimethylpentane	00565-59-3	1.25	0.79	0.990	
Cyclopentene	00142-29-0	6.69	0.57	3.794	
Indan	00496-11-7	3.23	0.45	1.440	
t-2-Hexene	04050-45-7	8.55	0.42	3.589	
2-Methyl-1-butene	00563-46-2	6.38	0.32	2.070	
n-Pentane	00109-66-0	1.21	0.16	0.189	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.02	0.245	
		Total	133.5	501.4	3.756

No MIR available, use weighted average of 3.7557

Vehicle 220b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7546

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	892.60	961.253	
2-Methylbutane (Isopentane)	00078-78-4	1.35	526.18	712.909	
Ethanol	00064-17-5	1.45	428.56	620.967	
Toluene	00108-88-3	3.93	351.76	1380.656	
n-Hexane	00110-54-3	1.13	308.99	350.599	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	202.21	282.648	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	192.65	231.016	
3-Methylpentane	00096-14-0	1.69	151.41	256.016	
n-Pentane	00109-66-0	1.21	102.33	124.325	
2-Methyl-2-butene	00513-35-9	14.20	95.80	1359.818	
Cyclohexane	00110-82-7	1.14	95.58	108.714	
Methylcyclopentane	00096-37-7	2.05	93.41	191.477	
2,3-Dimethylbutane	00079-29-8	0.90	90.28	81.133	
t-2-Pentene	00646-04-8	10.47	78.05	817.462	
2,3,4-Trimethylpentane	00565-75-3	0.95	71.14	67.498	
Benzene	00071-43-2	0.69	64.99	45.126	
Methylcyclohexane	00108-87-2	1.56	59.68	92.818	
2-Methylhexane	00591-76-4	1.09	57.54	62.439	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	50.18	160.132	
2,4-Dimethylpentane	00108-08-7	1.46	49.79	72.657	
n-Heptane	00142-82-5	0.97	47.93	46.289	
2-Methyl-1-butene	00563-46-2	6.38	47.42	302.473	
c-2-Pentene	00627-20-3	10.28	42.18	433.701	
2,3-Dimethylpentane	00565-59-3	1.25	33.91	42.337	
2,4-Dimethylhexane	00589-43-5	1.61	33.29	53.444	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	33.24	257.829	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	28.63	335.068	
t-2-Hexene	04050-45-7	8.55	27.16	232.162	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	24.94	40.040	
2,2,5-Trimethylhexane	03522-94-9	1.05	24.23	25.514	
n-Octane	00111-65-9	0.80	23.84	18.988	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	23.50	124.511	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	21.98	117.995	
3-Methyl-t-2-pentene	00616-12-6	11.66	21.21	247.336	
c-2-Butene	00590-18-1	14.26	20.30	289.422	
3-Methyl-c-2-pentene	00922-62-3	12.52	19.91	249.228	
2-Methyl-2-pentene	00625-27-4	11.03	19.48	214.867	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	18.91	139.677	
1-Methylcyclopentene	00693-89-0	12.45	18.81	234.242	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	16.71	18.253	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	16.03	105.888	
Cyclopentene	00142-29-0	6.69	14.61	97.703	
2-Methylheptane	00592-27-8	0.97	14.02	13.559	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	13.03	103.456	

Vehicle 220b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7546 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,2-Dimethylpentane	00590-35-2	1.04	12.12	12.640	
3-Methylheptane	00589-81-1	1.12	11.69	13.140	
t-1,2-Dimethylcyclopentane	00822-50-4	2.61	11.53	30.038	
ortho-Xylene	00095-47-6	7.58	10.03	75.993	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	9.47	41.600	
c-1,3-Dimethylcyclopentane	02532-58-3	2.61	9.28	24.168	
2,2-Dimethylbutane	00075-83-2	1.11	9.21	10.238	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	8.99	51.949	
1,3,5-Trimethylbenzene	00108-67-8	11.75	8.94	105.076	
Ethylbenzene	00100-41-4	2.96	8.72	25.839	
c-1,3-Dimethylcyclohexane	00638-04-0	2.61	8.41	21.910	
2-Methylpropane	00075-28-5	1.18	8.36	9.839	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	7.31	40.486	
3,3-Dimethylpentane	00562-49-2	1.12	6.91	7.726	
2,2,3-Trimethylbutane	00464-06-2	1.05	6.08	6.412	
n-Propylbenzene	00103-65-1	1.96	5.37	10.519	
2,2-DiMeHexane	00590-73-8	0.94	5.22	4.918	
n-Nonane	00111-84-2	0.68	4.61	3.147	
3,5-Dimethylheptane	00926-82-9	1.42	4.34	6.185	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	4.30	33.725	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	4.07	15.727	
2,3,5-Trimethylhexane	01069-53-0	1.12	3.80	4.259	
t-1,4-Dimethylcyclohexane	02207-04-7	2.61	3.61	9.404	
4-Methyloctane	02216-34-4	0.85	3.60	3.054	
Unknown #5		2.61	3.44	8.973	
Unknown #8		2.61	3.44	8.973	
Unknown #16		2.61	3.30	8.596	
n-Decane	00124-18-5	0.59	3.09	1.828	
3,3-Dimethylhexane	00563-16-6	1.15	2.78	3.197	
1,2,3-Trimethylbenzene	00526-73-8	11.94	2.70	32.264	
Unknown #13		2.61	2.42	6.302	
1,1-Dimethylcyclohexane	00590-66-9	1.12	2.27	2.531	
3-Methyloctane	02216-33-3	0.88	2.17	1.920	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.61	2.17	5.648	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	1.94	1.660	
Indan	00496-11-7	3.23	1.94	6.274	
c-2-Heptene	06443-92-1	7.08	1.87	13.219	
2,4-Dimethylheptane	02213-23-2	1.26	1.78	2.257	
1-Nonene	00124-11-8	2.49	1.78	4.445	
Isopropylbenzene (Cumene)	00098-82-8	2.61	1.72	4.477	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	1.71	12.093	
t-3-Heptene	14686-14-7	6.17	1.63	10.042	

Vehicle 220b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7546 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1,4-Diethylbenzene	00105-05-5	4.39	1.53	6.712	
t-4-Octene	14850-23-8	4.69	1.48	6.962	
Unknown #9		2.61	1.47	3.839	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	1.32	8.608	
2-Methyl-1,3-butadiene	00078-79-5	10.48	1.17	12.249	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	1.09	9.131	
Unknown #3		2.61	1.09	2.835	
Propane	00074-98-6	0.46	1.05	0.479	
1-Heptene	00592-76-7	4.29	0.98	4.191	
c- & t-4-Nonene	02198-23-4	4.42	0.89	3.942	
1,3-Butadiene	00106-99-0	12.45	0.88	10.993	
t-2-Nonene	06434-78-2	2.61	0.84	2.181	
2,2-Dimethyloctane	15869-87-1	0.76	0.77	0.584	
sec-Butylbenzene	00135-98-8	2.29	0.60	1.382	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	0.60	5.844	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	0.53	0.633	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.53	2.038	
c-2-Octene	07642-04-8	2.61	0.52	1.349	
Unknown #7		2.61	0.47	1.224	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.43	3.492	
1,3-Diethylbenzene	00141-93-5	7.08	0.34	2.410	
		Total	4805.1	12517.4	2.605
No MIR available, use weighted average of 2.6050					

Vehicle 220b - Fuel 7 psi E10 - 86°F Static - Test 7564					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	2650.87	3591.628	
Ethanol	00064-17-5	1.45	800.67	1160.156	
n-Butane	00106-97-8	1.08	756.65	814.851	
n-Hexane	00110-54-3	1.13	580.87	659.099	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	514.76	719.528	
n-Pentane	00109-66-0	1.21	408.11	495.831	
3-Methylpentane	00096-14-0	1.69	360.08	608.854	
2-Methyl-2-butene	00513-35-9	14.20	338.74	4808.373	
t-2-Pentene	00646-04-8	10.47	280.15	2934.157	
2,3-Dimethylbutane	00079-29-8	0.90	254.63	228.837	
Toluene	00108-88-3	3.93	242.74	952.747	
2-Methyl-1-butene	00563-46-2	6.38	198.81	1268.108	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	171.61	205.776	
Methylcyclopentane	00096-37-7	2.05	170.27	349.010	
c-2-Pentene	00627-20-3	10.28	152.17	1564.527	
Cyclohexane	00110-82-7	1.14	145.36	165.322	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	119.30	1396.394	
c-2-Butene	00590-18-1	14.26	108.49	1547.021	
Benzene	00071-43-2	0.69	92.64	64.323	
2,4-Dimethylpentane	00108-08-7	1.46	73.97	107.943	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	71.61	568.645	
2-Methylpropane	00075-28-5	1.18	62.65	73.719	
2-Methylhexane	00591-76-4	1.09	60.01	65.118	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	51.06	162.915	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	50.68	268.531	
Methylcyclohexane	00108-87-2	1.56	50.21	78.100	
t-2-Hexene	04050-45-7	8.55	48.28	412.718	
Cyclopentene	00142-29-0	6.69	43.71	292.221	
2,3,4-Trimethylpentane	00565-75-3	0.95	42.32	40.158	
3-Methyl-t-2-pentene	00616-12-6	11.66	39.85	464.665	
2-Methyl-2-pentene	00625-27-4	11.03	37.64	415.293	
n-Heptane	00142-82-5	0.97	37.08	35.811	
2,3-Dimethylpentane	00565-59-3	1.25	36.74	45.867	
3-Methyl-c-2-pentene	00922-62-3	12.52	33.57	420.182	
2,2-Dimethylbutane	00075-83-2	1.11	29.63	32.923	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	28.99	191.537	
1-Methylcyclopentene	00693-89-0	12.45	25.94	323.019	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	24.21	139.870	
2,4-Dimethylhexane	00589-43-5	1.61	21.28	34.162	
2,2-Dimethylpentane	00590-35-2	1.04	19.27	20.104	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	15.13	24.292	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	14.95	115.931	
t-1,2-Dimethylcyclopentane	00822-50-4	3.01	11.74	35.401	
2,2,5-Trimethylhexane	03522-94-9	1.05	10.44	10.999	

Vehicle 220b - Fuel 7 psi E10 - 86°F Static - Test 7564 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	10.20	75.368	
n-Octane	00111-65-9	0.80	9.96	7.934	
c-1,3-Dimethylcyclopentane	02532-58-3	3.01	9.87	29.743	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	9.46	50.792	
2,2,3-Trimethylbutane	00464-06-2	1.05	9.37	9.880	
Propane	00074-98-6	0.46	9.06	4.142	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	8.66	9.460	
3,3-Dimethylpentane	00562-49-2	1.12	7.99	8.934	
2-Methylheptane	00592-27-8	0.97	7.06	6.828	
3-Methylheptane	00589-81-1	1.12	5.65	6.356	
ortho-Xylene	00095-47-6	7.58	4.53	34.296	
c-1,3-Dimethylcyclohexane	00638-04-0	3.01	4.43	13.349	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	3.81	16.734	
1,3,5-Trimethylbenzene	00108-67-8	11.75	3.77	44.336	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	3.71	29.091	
2-Methyl-1,3-butadiene	00078-79-5	10.48	3.58	37.532	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	3.29	18.230	
Ethylbenzene	00100-41-4	2.96	2.87	8.490	
3,5-Dimethylheptane	00926-82-9	1.42	2.55	3.634	
n-Propylbenzene	00103-65-1	1.96	2.06	4.034	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	2.04	7.897	
t-1,4-Dimethylcyclohexane	02207-04-7	3.01	1.85	5.591	
3,3-Dimethylhexane	00563-16-6	1.15	1.85	2.132	
Unknown #5		3.01	1.84	5.541	
Cyclopentadiene	00542-92-7	6.89	1.64	11.270	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.56	1.748	
c-2-Heptene	06443-92-1	7.08	1.51	10.680	
n-Nonane	00111-84-2	0.68	1.47	1.006	
t-3-Heptene	14686-14-7	6.17	1.36	8.372	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.34	16.030	
Unknown #16		3.01	1.25	3.768	
1,1-Dimethylcyclohexane	00590-66-9	1.12	1.17	1.303	
4-Methyloctane	02216-34-4	0.85	1.13	0.958	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	3.01	1.11	3.358	
Unknown #8		3.01	1.11	3.341	
Unknown #3		3.01	0.87	2.626	
1,3-Butadiene	00106-99-0	12.45	0.86	10.721	
1-Heptene	00592-76-7	4.29	0.82	3.495	
Isopropylbenzene (Cumene)	00098-82-8	3.01	0.80	2.405	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	0.79	5.197	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.72	5.127	
t-4-Octene	14850-23-8	4.69	0.67	3.165	

Vehicle 220b - Fuel 7 psi E10 - 86°F Static - Test 7564 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Nonene	00124-11-8	2.49	0.67	1.671	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.66	5.506	
n-Decane	00124-18-5	0.59	0.64	0.380	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	0.63	0.538	
2,4-Dimethylheptane	02213-23-2	1.26	0.42	0.536	
3-Methyloctane	02216-33-3	0.88	0.41	0.366	
Unknown #9		3.01	0.40	1.208	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	0.31	3.028	
1-Butyne	00107-00-6	6.05	0.18	1.099	
n-Undecane	01120-21-4	0.52	0.16	0.086	
		Total	9442.0	28464.0	3.015
No MIR available, use weighted average of 3.0146					

Vehicle 220b - Fuel 7 psi E10 - 105°F Static - Test 7565

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	5769.20	7816.612	
Ethanol	00064-17-5	1.45	2589.89	3752.691	
n-Butane	00106-97-8	1.08	1559.36	1679.295	
n-Hexane	00110-54-3	1.13	1414.77	1605.303	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1218.97	1703.867	
n-Pentane	00109-66-0	1.21	915.30	1112.033	
3-Methylpentane	00096-14-0	1.69	858.34	1451.348	
2-Methyl-2-butene	00513-35-9	14.20	773.35	10977.672	
Toluene	00108-88-3	3.93	656.57	2577.062	
t-2-Pentene	00646-04-8	10.47	633.05	6630.198	
2,3-Dimethylbutane	00079-29-8	0.90	593.24	533.142	
2-Methyl-1-butene	00563-46-2	6.38	441.57	2816.547	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	440.53	528.245	
Methylcyclopentane	00096-37-7	2.05	412.33	845.189	
Cyclohexane	00110-82-7	1.14	347.77	395.544	
c-2-Pentene	00627-20-3	10.28	344.63	3543.302	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	263.56	3084.817	
Benzene	00071-43-2	0.69	227.73	158.124	
c-2-Butene	00590-18-1	14.26	226.76	3233.612	
2,4-Dimethylpentane	00108-08-7	1.46	182.35	266.113	
2-Methylhexane	00591-76-4	1.09	151.57	164.481	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	144.84	1150.181	
Methylcyclohexane	00108-87-2	1.56	132.17	205.572	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	131.60	419.935	
2-Methylpropane	00075-28-5	1.18	127.58	150.115	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	121.35	642.951	
t-2-Hexene	04050-45-7	8.55	117.30	1002.733	
2,3,4-Trimethylpentane	00565-75-3	0.95	115.01	109.127	
Cyclopentene	00142-29-0	6.69	104.56	699.056	
n-Heptane	00142-82-5	0.97	97.85	94.496	
3-Methyl-t-2-pentene	00616-12-6	11.66	96.96	1130.464	
2,3-Dimethylpentane	00565-59-3	1.25	93.43	116.628	
2-Methyl-2-pentene	00625-27-4	11.03	91.72	1011.846	
3-Methyl-c-2-pentene	00922-62-3	12.52	82.76	1036.021	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	71.09	469.667	
2,2-Dimethylbutane	00075-83-2	1.11	69.23	76.931	
1-Methylcyclopentene	00693-89-0	12.45	66.31	825.804	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	58.14	335.930	
2,4-Dimethylhexane	00589-43-5	1.61	57.48	92.290	
2,2-Dimethylpentane	00590-35-2	1.04	47.87	49.926	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	41.57	66.729	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	40.64	315.148	
t-1,2-Dimethylcyclopentane	00822-50-4	2.97	29.75	88.286	
2,2,5-Trimethylhexane	03522-94-9	1.05	29.38	30.935	

Vehicle 220b - Fuel 7 psi E10 - 105°F Static - Test 7565 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Octane	00111-65-9	0.80	28.01	22.300	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	26.14	140.342	
2,2,3-Trimethylbutane	00464-06-2	1.05	25.38	26.755	
c-1,3-Dimethylcyclopentane	02532-58-3	2.97	25.04	74.296	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	24.60	26.870	
3,3-Dimethylpentane	00562-49-2	1.12	21.75	24.335	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	21.73	160.471	
2-Methylheptane	00592-27-8	0.97	17.82	17.240	
Propane	00074-98-6	0.46	16.88	7.715	
3-Methylheptane	00589-81-1	1.12	15.97	17.957	
c-1,3-Dimethylcyclohexane	00638-04-0	2.97	12.00	35.609	
ortho-Xylene	00095-47-6	7.58	11.88	89.997	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	10.82	47.540	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	10.16	79.609	
1,3,5-Trimethylbenzene	00108-67-8	11.75	10.00	117.556	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	8.49	47.032	
2-Methyl-1,3-butadiene	00078-79-5	10.48	8.27	86.655	
Ethylcyclohexane	01678-91-7	1.35	8.09	10.877	
Ethylbenzene	00100-41-4	2.96	7.29	21.601	
n-Propylbenzene	00103-65-1	1.96	6.42	12.574	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	5.54	21.384	
t-1,4-Dimethylcyclohexane	02207-04-7	2.97	5.50	16.327	
Unknown #5		2.97	5.42	16.092	
3,3-Dimethylhexane	00563-16-6	1.15	5.35	6.156	
Cyclopentadiene	00542-92-7	6.89	5.09	35.060	
c-2-Heptene	06443-92-1	7.08	4.75	33.578	
n-Nonane	00111-84-2	0.68	4.07	2.777	
t-3-Heptene	14686-14-7	6.17	3.84	23.672	
1,2,3-Trimethylbenzene	00526-73-8	11.94	3.79	45.212	
1,1-Dimethylcyclohexane	00590-66-9	1.12	3.66	4.080	
2,3,5-Trimethylhexane	01069-53-0	1.12	3.61	4.049	
Unknown #3		2.97	3.19	9.455	
Unknown #8		2.97	3.01	8.926	
4-Methyloctane	02216-34-4	0.85	2.94	2.494	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.97	2.91	8.627	
Unknown #13		2.97	2.75	8.159	
1-Heptene	00592-76-7	4.29	2.66	11.402	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	2.65	17.338	
Isopropylbenzene (Cumene)	00098-82-8	2.97	2.59	7.693	
4-Methyl-t-2-pentene	00674-76-0	8.04	2.56	20.606	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	2.25	18.832	
3-Methyloctane	02216-33-3	0.88	2.23	1.971	

Vehicle 220b - Fuel 7 psi E10 - 105°F Static - Test 7565 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Decane	00124-18-5	0.59	2.22	1.312	
Unknown #16		2.97	2.08	6.186	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	2.06	1.763	
1-Nonene	00124-11-8	2.49	1.81	4.502	
1,3-Butadiene	00106-99-0	12.45	1.71	21.247	
1,4-Diethylbenzene	00105-05-5	4.39	1.65	7.255	
2,4-Dimethylheptane	02213-23-2	1.26	1.65	2.088	
t-4-Octene	14850-23-8	4.69	1.55	7.276	
Unknown #9		2.97	1.54	4.573	
Indan	00496-11-7	3.23	1.54	4.965	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	1.48	14.414	
Unknown #23		2.97	1.45	4.316	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	1.40	9.937	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	1.24	9.372	
1-Methyl-2-Propylbenzene	01074-17-5	5.43	1.21	6.580	
Unknown #14		2.97	1.15	3.408	
2,2-Dimethyloctane	15869-87-1	0.76	0.97	0.733	
1,3-Diethylbenzene	00141-93-5	7.08	0.97	6.834	
c- & t-4-Nonene	02198-23-4	4.42	0.95	4.195	
t-2-Nonene	06434-78-2	2.97	0.89	2.656	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.87	6.526	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	0.82	0.971	
sec-Butylbenzene	00135-98-8	2.29	0.72	1.655	
3-Methylnonane		2.97	0.72	2.141	
Unknown #7		2.97	0.67	1.996	
Unknown #4		2.97	0.65	1.943	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.65	2.498	
Isobutylbenzene	00538-93-2	2.97	0.65	1.933	
Unknown #6	.	2.97	0.64	1.886	
1,3-Dimethyl-2-Ethylbenzene	02870-04-4	10.16	0.62	6.348	
Unknown #15		2.97	0.57	1.680	
Unknown #10		2.97	0.48	1.430	
1-Butyne	00107-00-6	6.05	0.42	2.558	
1,3-Dimethyl-4-Ethylbenzene	00874-41-9	7.54	0.39	2.944	
t-2-Octene & t-1,2-DiMeCyHexane	13389-42-9+06876-23-9	5.92	0.37	2.164	
c-1,2-Dimethylcyclohexane	02207-01-4	2.97	0.34	1.006	
n-Undecane	01120-21-4	0.52	0.34	0.176	
c-2-Octene	07642-04-8	2.97	0.32	0.959	
Unknown #12		2.97	0.32	0.944	
4-Isopropyltoluene (p-Cymene)	00099-87-6	4.41	0.25	1.123	
1,2,4,5-Tetramethylbenzene	00095-93-2	9.26	0.19	1.748	
		Total	22427.0	66555.4	2.968
No MIR available, use weighted average of 2.9676					

Vehicle 220b - Fuel 7 psi E10 - Dynamic - Test 25781

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	98.83	133.901	
Ethanol	00064-17-5	1.45	28.30	41.006	
n-Hexane	00110-54-3	1.13	26.58	30.156	
Toluene	00108-88-3	3.93	24.49	96.112	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	22.09	30.872	
n-Pentane	00109-66-0	1.21	16.18	19.656	
3-Methylpentane	00096-14-0	1.69	15.88	26.846	
2-Methyl-2-butene	00513-35-9	14.20	12.64	179.359	
n-Butane	00106-97-8	1.08	11.94	12.859	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	11.47	13.757	
2,3-Dimethylbutane	00079-29-8	0.90	11.39	10.233	
t-2-Pentene	00646-04-8	10.47	10.47	109.676	
Methylcyclopentane	00096-37-7	2.05	8.17	16.737	
2-Methyl-1-butene	00563-46-2	6.38	7.92	50.510	
Cyclohexane	00110-82-7	1.14	6.74	7.663	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	6.19	33.261	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	5.12	16.339	
c-2-Pentene	00627-20-3	10.28	5.06	52.052	
c-2-Butene	00590-18-1	14.26	4.93	70.326	
Benzene	00071-43-2	0.69	4.79	3.324	
1,3,5-Trimethylbenzene	00108-67-8	11.75	4.41	51.813	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	4.36	51.038	
2,4-Dimethylpentane	00108-08-7	1.46	3.96	5.784	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	3.86	20.464	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	3.79	30.111	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	3.67	28.441	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	3.57	15.704	
2,3,4-Trimethylpentane	00565-75-3	0.95	3.55	3.372	
2-Methylpropane	00075-28-5	1.18	3.43	4.033	
2-Methylhexane	00591-76-4	1.09	3.32	3.604	
Methylcyclohexane	00108-87-2	1.56	3.12	4.854	
n-Heptane	00142-82-5	0.97	2.95	2.854	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	2.60	17.196	
t-2-Hexene	04050-45-7	8.55	2.54	21.712	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	2.51	17.810	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	2.43	17.949	
2,2-Dimethylpentane	00590-35-2	1.04	2.29	2.391	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	2.26	12.543	
n-Octane	00111-65-9	0.80	2.11	1.684	
n-Nonane	00111-84-2	0.68	2.06	1.404	
2,3-Dimethylpentane	00565-59-3	1.25	2.01	2.514	
Methane	00074-82-8	0.01	1.99	0.028	
2-Methyl-2-pentene	00625-27-4	11.03	1.91	21.073	
3-Methyl-t-2-pentene	00616-12-6	11.66	1.89	22.026	

Vehicle 220b - Fuel 7 psi E10 - Dynamic - Test 25781 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Undecane	01120-21-4	0.52	1.87	0.975	
2,2,5-Trimethylhexane	03522-94-9	1.05	1.81	1.902	
Cyclopentene	00142-29-0	6.69	1.77	11.804	
ortho-Xylene	00095-47-6	7.58	1.76	13.337	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.67	19.911	
3-Methyl-c-2-pentene	00922-62-3	12.52	1.66	20.757	
2,2-Dimethylbutane	00075-83-2	1.11	1.62	1.796	
n-Propylbenzene	00103-65-1	1.96	1.60	3.133	
3,3-Dimethylpentane	00562-49-2	1.12	1.46	1.630	
3-Methylheptane	00589-81-1	1.12	1.40	1.569	
t-1,2-Dimethylcyclopentane	00822-50-4	3.28	1.38	4.516	
Indan	00496-11-7	3.23	1.34	4.321	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	1.32	2.113	
1-Methylcyclopentene	00693-89-0	12.45	1.25	15.571	
c-1,3-Dimethylcyclohexane	00638-04-0	3.28	1.20	3.939	
c-1,3-Dimethylcyclopentane	02532-58-3	3.28	1.20	3.928	
Ethylbenzene	00100-41-4	2.96	1.07	3.180	
n-Decane	00124-18-5	0.59	1.02	0.600	
2-Methylheptane	00592-27-8	0.97	0.81	0.780	
2,2,3-Trimethylbutane	00464-06-2	1.05	0.73	0.768	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.68	2.611	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	0.67	3.875	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.63	6.610	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.52	0.571	
2,4-Dimethylhexane	00589-43-5	1.61	0.02	0.034	
		Total	440.2	1445.3	3.283
No MIR available, use weighted average of 3.2833					

Vehicle 220b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7569

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	489.17	662.773	
Ethanol	00064-17-5	1.45	400.13	579.776	
Toluene	00108-88-3	3.93	359.77	1412.113	
n-Hexane	00110-54-3	1.13	300.42	340.878	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	192.23	268.701	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	182.57	218.917	
3-Methylpentane	00096-14-0	1.69	145.21	245.525	
n-Butane	00106-97-8	1.08	119.26	128.430	
n-Pentane	00109-66-0	1.21	95.19	115.644	
Cyclohexane	00110-82-7	1.14	93.57	106.425	
2-Methyl-2-butene	00513-35-9	14.20	90.18	1280.067	
Methylcyclopentane	00096-37-7	2.05	89.98	184.432	
2,3-Dimethylbutane	00079-29-8	0.90	84.97	76.362	
t-2-Pentene	00646-04-8	10.47	73.23	766.951	
2,3,4-Trimethylpentane	00565-75-3	0.95	68.70	65.189	
Benzene	00071-43-2	0.69	64.99	45.127	
Methylcyclohexane	00108-87-2	1.56	58.40	90.837	
2-Methylhexane	00591-76-4	1.09	54.62	59.269	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	48.02	153.243	
n-Heptane	00142-82-5	0.97	47.88	46.239	
2,4-Dimethylpentane	00108-08-7	1.46	47.48	69.294	
2-Methyl-1-butene	00563-46-2	6.38	43.73	278.949	
c-2-Pentene	00627-20-3	10.28	39.42	405.244	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	34.71	269.153	
2,4-Dimethylhexane	00589-43-5	1.61	32.69	52.491	
2,3-Dimethylpentane	00565-59-3	1.25	31.57	39.406	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	28.61	211.289	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	27.35	320.167	
t-2-Hexene	04050-45-7	8.55	26.15	223.518	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	25.58	137.339	
n-Octane	00111-65-9	0.80	25.39	20.218	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	23.79	38.192	
2,2,5-Trimethylhexane	03522-94-9	1.05	23.77	25.033	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	22.90	121.314	
3-Methyl-t-2-pentene	00616-12-6	11.66	20.75	241.964	
3-Methyl-c-2-pentene	00922-62-3	12.52	19.27	241.268	
2-Methyl-2-pentene	00625-27-4	11.03	18.56	204.719	
c-2-Butene	00590-18-1	14.26	18.06	257.579	
1-Methylcyclopentene	00693-89-0	12.45	18.02	224.391	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	16.64	18.172	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	15.53	102.611	
Cyclopentene	00142-29-0	6.69	13.49	90.225	
2-Methylheptane	00592-27-8	0.97	13.31	12.877	
3-Methylheptane	00589-81-1	1.12	11.96	13.451	

Vehicle 220b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7569 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	11.86	94.172	
2,2-Dimethylpentane	00590-35-2	1.04	11.44	11.931	
t-1,2-Dimethylcyclopentane	00822-50-4	2.93	11.38	33.352	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	11.25	49.438	
1,3,5-Trimethylbenzene	00108-67-8	11.75	10.70	125.754	
ortho-Xylene	00095-47-6	7.58	10.23	77.467	
2,2-Dimethylbutane	00075-83-2	1.11	9.79	10.883	
c-1,3-Dimethylcyclopentane	02532-58-3	2.93	9.07	26.589	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	8.70	48.240	
c-1,3-Dimethylcyclohexane	00638-04-0	2.93	8.65	25.348	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	8.21	47.420	
Ethylbenzene	00100-41-4	2.96	7.78	23.059	
2-Methylpropane	00075-28-5	1.18	7.40	8.705	
n-Propylbenzene	00103-65-1	1.96	6.78	13.292	
3,3-Dimethylpentane	00562-49-2	1.12	6.66	7.446	
2,2,3-Trimethylbutane	00464-06-2	1.05	5.72	6.028	
n-Nonane	00111-84-2	0.68	5.18	3.537	
2,2-DiMeHexane	00590-73-8	0.94	4.79	4.504	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	4.32	33.865	
4-Methyloctane	02216-34-4	0.85	4.15	3.519	
Unknown #16		2.93	4.07	11.939	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	4.07	15.734	
2,3,5-Trimethylhexane	01069-53-0	1.12	3.93	4.401	
t-1,4-Dimethylcyclohexane	02207-04-7	2.93	3.78	11.067	
3,5-Dimethylheptane	00926-82-9	1.42	3.74	5.329	
Unknown #8		2.93	3.60	10.550	
Unknown #5		2.93	3.53	10.346	
1,2,3-Trimethylbenzene	00526-73-8	11.94	3.50	41.768	
n-Decane	00124-18-5	0.59	3.19	1.884	
3-Methyloctane	02216-33-3	0.88	3.01	2.662	
3,3-Dimethylhexane	00563-16-6	1.15	2.96	3.407	
Unknown #13		2.93	2.84	8.314	
1,1-Dimethylcyclohexane	00590-66-9	1.12	2.48	2.768	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	2.40	2.050	
Indan	00496-11-7	3.23	2.34	7.572	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	2.28	16.138	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.93	2.25	6.584	
c-2-Heptene	06443-92-1	7.08	2.11	14.911	
1-Nonene	00124-11-8	2.49	1.89	4.711	
Isopropylbenzene (Cumene)	00098-82-8	2.93	1.84	5.394	
1,4-Diethylbenzene	00105-05-5	4.39	1.78	7.792	
t-3-Heptene	14686-14-7	6.17	1.73	10.692	

Vehicle 220b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7569 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,4-Dimethylheptane	02213-23-2	1.26	1.61	2.041	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	1.49	1.759	
Unknown #9		2.93	1.32	3.856	
1-Methyl-2-Propylbenzene	01074-17-5	5.43	1.30	7.076	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	1.22	7.986	
1,3-Butadiene	00106-99-0	12.45	1.16	14.450	
1-Heptene	00592-76-7	4.29	1.15	4.924	
t-4-Octene	14850-23-8	4.69	1.12	5.244	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	1.12	9.362	
3-Methylnonane		2.93	1.08	3.176	
Ethylene	00074-85-1	8.88	1.02	9.052	
2-Methyl-1,3-butadiene	00078-79-5	10.48	1.00	10.454	
Propane	00074-98-6	0.46	0.99	0.452	
Unknown #14		2.93	0.92	2.697	
c- & t-4-Nonene	02198-23-4	4.42	0.91	4.022	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	0.90	6.791	
t-2-Nonene	06434-78-2	2.93	0.88	2.585	
Unknown #3		2.93	0.88	2.581	
Unknown #22	.	2.93	0.86	2.524	
1,3-Diethylbenzene	00141-93-5	7.08	0.84	5.930	
c-2-Octene	07642-04-8	2.93	0.82	2.398	
sec-Butylbenzene	00135-98-8	2.29	0.78	1.795	
2,2-Dimethyloctane	15869-87-1	0.76	0.74	0.560	
n-Undecane	01120-21-4	0.52	0.72	0.378	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.63	2.409	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.62	5.015	
1,3-Dimethyl-2-Ethylbenzene	02870-04-4	10.16	0.62	6.279	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	0.61	5.955	
Unknown #7		2.93	0.58	1.693	
Isobutylbenzene	00538-93-2	2.93	0.56	1.630	
Unknown #6	.	2.93	0.54	1.583	
Unknown #12		2.93	0.50	1.468	
Unknown #10		2.93	0.45	1.317	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.41	3.123	
t-2-Octene & t-1,2-DiMeCyHexane	13389-42-9+06876-23-9	5.92	0.41	2.440	
Unknown #17		2.93	0.41	1.190	
1,3-Dimethyl-4-Ethylbenzene	00874-41-9	7.54	0.33	2.478	
Unknown #15		2.93	0.30	0.878	
4-Isopropyltoluene (p-Cymene)	00099-87-6	4.41	0.28	1.240	
		Total	3916.7	11477.1	2.930
No MIR available, use weighted average of 2.9303					

Vehicle 220b - Fuel 9 psi E0 - 86°F Static - Test 7644					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	9476.55	10205.420	
2-Methylbutane (Isopentane)	00078-78-4	1.35	6062.19	8213.588	
Cyclohexane	00110-82-7	1.14	1145.93	1303.337	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	749.37	1047.458	
n-Hexane	00110-54-3	1.13	595.96	676.225	
n-Pentane	00109-66-0	1.21	516.50	627.514	
3-Methylpentane	00096-14-0	1.69	480.94	813.205	
2,3-Dimethylbutane	00079-29-8	0.90	442.20	397.402	
2-Methyl-2-butene	00513-35-9	14.20	413.43	5868.679	
Toluene	00108-88-3	3.93	401.99	1577.804	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	341.71	409.745	
t-2-Pentene	00646-04-8	10.47	320.70	3358.834	
Methylcyclopentane	00096-37-7	2.05	227.84	467.014	
2-Methyl-1-butene	00563-46-2	6.38	219.35	1399.150	
c-2-Pentene	00627-20-3	10.28	174.52	1794.265	
t-2-Butene	00624-64-6	15.20	132.26	2010.005	
Benzene	00071-43-2	0.69	130.94	90.916	
2,4-Dimethylpentane	00108-08-7	1.46	128.45	187.447	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	127.39	1491.092	
c-2-Butene	00590-18-1	14.26	102.93	1467.759	
2,3,4-Trimethylpentane	00565-75-3	0.95	87.93	83.431	
2,2-Dimethylbutane	00075-83-2	1.11	87.02	96.698	
2,3-Dimethylpentane	00565-59-3	1.25	75.65	94.439	
2-Methylhexane	00591-76-4	1.09	74.15	80.472	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	67.24	356.267	
t-2-Hexene	04050-45-7	8.55	64.62	552.425	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	64.49	205.770	
3-Methyl-t-2-pentene	00616-12-6	11.66	62.94	733.843	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	61.13	485.454	
Cyclopentene	00142-29-0	6.69	53.21	355.777	
2-Methyl-2-pentene	00625-27-4	11.03	50.00	551.639	
3-Methyl-c-2-pentene	00922-62-3	12.52	44.98	563.086	
1-Methylcyclopentene	00693-89-0	12.45	38.94	484.991	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	37.82	249.884	
3-Methyl-1-butene	00563-45-1	6.85	36.81	252.358	
2-Methylpropane	00075-28-5	1.18	33.81	39.779	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	31.90	184.292	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	31.78	246.451	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	29.81	47.859	
2,4-Dimethylhexane	00589-43-5	1.61	29.62	47.552	
2,2,5-Trimethylhexane	03522-94-9	1.05	25.30	26.642	
n-Heptane	00142-82-5	0.97	23.59	22.784	
2,2-Dimethylpentane	00590-35-2	1.04	18.53	19.325	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	18.52	20.224	

Vehicle 220b - Fuel 9 psi E0 - 86°F Static - Test 7644 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Methylcyclohexane	00108-87-2	1.56	16.79	26.122	
t-1,2-Dimethylcyclopentane	00822-50-4	2.12	16.73	35.534	
c-1,3-Dimethylcyclopentane	02532-58-3	2.12	13.43	28.535	
2,2,3-Trimethylbutane	00464-06-2	1.05	11.95	12.596	
4-Methyl-t-2-pentene	00674-76-0	8.04	11.71	94.130	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	11.47	61.582	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	10.49	77.485	
ortho-Xylene	00095-47-6	7.58	9.39	71.125	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	7.78	34.179	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	7.32	57.358	
3,3-Dimethylpentane	00562-49-2	1.12	7.03	7.865	
3-Methylheptane	00589-81-1	1.12	6.24	7.017	
Ethylbenzene	00100-41-4	2.96	6.15	18.224	
Unknown #1		2.12	4.83	10.259	
2-Methylheptane	00592-27-8	0.97	4.80	4.647	
2-Methyl-1,3-butadiene	00078-79-5	10.48	4.62	48.464	
1,3,5-Trimethylbenzene	00108-67-8	11.75	4.43	52.038	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	4.18	23.191	
Propane	00074-98-6	0.46	4.17	1.908	
n-Propylbenzene	00103-65-1	1.96	3.93	7.710	
Unknown #5		2.12	3.68	7.826	
n-Octane	00111-65-9	0.80	3.17	2.527	
c-2-Heptene	06443-92-1	2.12	2.95	6.277	
Unknown #6	.	2.12	2.46	5.236	
1,2,3-Trimethylbenzene	00526-73-8	11.94	2.28	27.177	
c-1,3-Dimethylcyclohexane	00638-04-0	2.12	2.19	4.662	
t-3-Heptene	14686-14-7	6.17	2.10	12.978	
Unknown #3		2.12	2.07	4.405	
Unknown #16		2.12	1.87	3.977	
Unknown #22	.	2.12	1.83	3.890	
1-Heptene	00592-76-7	4.29	1.82	7.802	
3,3-Dimethylhexane	00563-16-6	1.15	1.66	1.908	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.65	1.853	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	1.64	10.762	
Ethylcyclohexane	01678-91-7	1.35	1.64	2.203	
n-Nonane	00111-84-2	0.68	1.46	0.995	
1,1-Dimethylcyclohexane	00590-66-9	1.12	1.45	1.612	
Methane	00074-82-8	0.01	1.33	0.018	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	1.33	11.117	
Styrene	00100-42-5	1.66	1.24	2.052	
Unknown #8		2.12	1.10	2.331	
Isopropylbenzene (Cumene)	00098-82-8	2.12	1.02	2.170	

Vehicle 220b - Fuel 9 psi E0 - 86°F Static - Test 7644 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	0.97	9.450	
1-Nonene	00124-11-8	2.49	0.89	2.210	
4-Methyloctane	02216-34-4	0.85	0.84	0.710	
2,4-Dimethylheptane	02213-23-2	1.26	0.82	1.041	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.75	4.734	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.12	0.70	1.480	
1,3-Butadiene	00106-99-0	12.45	0.64	7.994	
		Total	23556.0	50039.7	2.124
No MIR available, use weighted average of 2.1243					

Vehicle 220b - Fuel 9 psi E0 - 105°F Static - Test 7647

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	13505.49	14544.237	
2-Methylbutane (Isopentane)	00078-78-4	1.35	9713.77	13161.067	
Cyclohexane	00110-82-7	1.14	2674.68	3042.085	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1448.55	2024.768	
n-Hexane	00110-54-3	1.13	1252.04	1420.662	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1063.79	1275.612	
3-Methylpentane	00096-14-0	1.69	954.60	1614.109	
n-Pentane	00109-66-0	1.21	868.43	1055.084	
2,3-Dimethylbutane	00079-29-8	0.90	836.00	751.307	
2-Methyl-2-butene	00513-35-9	14.20	701.33	9955.338	
Toluene	00108-88-3	3.93	683.32	2682.063	
t-2-Pentene	00646-04-8	10.47	537.38	5628.248	
Methylcyclopentane	00096-37-7	2.05	488.57	1001.463	
2,3,4-Trimethylpentane	00565-75-3	0.95	364.02	345.394	
2-Methyl-1-butene	00563-46-2	6.38	361.34	2304.852	
2,4-Dimethylpentane	00108-08-7	1.46	300.42	438.410	
c-2-Pentene	00627-20-3	10.28	294.44	3027.258	
Benzene	00071-43-2	0.69	273.07	189.604	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	213.03	2493.441	
2-Methylhexane	00591-76-4	1.09	208.43	226.182	
2,3-Dimethylpentane	00565-59-3	1.25	203.30	253.786	
t-2-Butene	00624-64-6	15.20	190.39	2893.522	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	183.66	586.061	
c-2-Butene	00590-18-1	14.26	156.04	2225.116	
2,2-Dimethylbutane	00075-83-2	1.11	149.97	166.643	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	138.21	732.285	
t-2-Hexene	04050-45-7	8.55	134.27	1147.862	
3-Methyl-t-2-pentene	00616-12-6	11.66	131.42	1532.305	
2,4-Dimethylhexane	00589-43-5	1.61	117.92	189.323	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	115.00	184.612	
2-Methyl-2-pentene	00625-27-4	11.03	102.46	1130.401	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	96.46	748.104	
3-Methyl-c-2-pentene	00922-62-3	12.52	95.63	1197.103	
Cyclopentene	00142-29-0	6.69	94.31	630.569	
1-Methylcyclopentene	00693-89-0	12.45	93.50	1164.488	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	88.56	703.287	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	77.91	418.321	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	74.39	491.440	
n-Heptane	00142-82-5	0.97	72.26	69.783	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	64.71	373.877	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	63.26	467.230	
2,2,5-Trimethylhexane	03522-94-9	1.05	62.81	66.145	
3-Methyl-1-butene	00563-45-1	6.85	59.58	408.389	
Methylcyclohexane	00108-87-2	1.56	54.72	85.117	

Vehicle 220b - Fuel 9 psi E0 - 105°F Static - Test 7647 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
t-1,2-Dimethylcyclopentane	00822-50-4	2.20	46.75	102.786	
2,2-Dimethylpentane	00590-35-2	1.04	40.75	42.504	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	39.42	173.207	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	36.88	40.280	
c-1,3-Dimethylcyclopentane	02532-58-3	2.20	36.59	80.450	
ortho-Xylene	00095-47-6	7.58	32.08	243.040	
1,3,5-Trimethylbenzene	00108-67-8	11.75	29.47	346.410	
4-Methyl-t-2-pentene	00674-76-0	8.04	25.95	208.593	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	25.34	140.416	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	24.99	195.770	
2,2,3-Trimethylbutane	00464-06-2	1.05	24.02	25.321	
1,2,3-Trimethylbenzene	00526-73-8	11.94	22.49	268.523	
3,3-Dimethylpentane	00562-49-2	1.12	19.27	21.557	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	19.07	135.059	
n-Propylbenzene	00103-65-1	1.96	16.55	32.438	
Ethylbenzene	00100-41-4	2.96	15.85	46.961	
Indan	00496-11-7	3.23	13.39	43.324	
1,4-Diethylbenzene	00105-05-5	4.39	12.70	55.719	
Unknown #16		2.20	12.53	27.550	
2-Methylpropane	00075-28-5	1.18	10.60	12.475	
1-Methyl-2-Propylbenzene	01074-17-5	5.43	9.83	53.430	
c-2-Heptene	06443-92-1	7.08	9.35	66.163	
Unknown #13		2.20	9.24	20.320	
2-Methylheptane	00592-27-8	0.97	8.97	8.676	
3-Methylheptane	00589-81-1	1.12	8.84	9.935	
3,5-Dimethylheptane	00926-82-9	1.42	8.76	12.468	
3,3-Dimethylhexane	00563-16-6	1.15	8.68	9.991	
Isopropylbenzene (Cumene)	00098-82-8	2.20	8.01	17.611	
2-Methyl-1,3-butadiene	00078-79-5	10.48	8.00	83.901	
Unknown #1		2.20	7.25	15.930	
1-Nonene	00124-11-8	2.49	6.52	16.256	
t-3-Heptene	14686-14-7	6.17	6.48	39.994	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	6.32	41.394	
2,3,5-Trimethylhexane	01069-53-0	1.12	6.29	7.051	
Unknown #5		2.20	6.27	13.793	
1,3-Dimethyl-2-Ethylbenzene	02870-04-4	10.16	6.24	63.426	
n-Octane	00111-65-9	0.80	5.90	4.700	
Unknown #3		2.20	5.86	12.893	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.20	5.86	12.876	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	5.41	40.743	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	5.27	39.690	
1-Heptene	00592-76-7	4.29	5.22	22.403	

Vehicle 220b - Fuel 9 psi E0 - 105°F Static - Test 7647 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	5.15	19.898	
n-Butylbenzene	00104-51-8	2.29	5.10	11.690	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	4.56	38.172	
c-1,3-Dimethylcyclohexane	00638-04-0	2.20	4.19	9.209	
1,3-Diethylbenzene	00141-93-5	7.08	3.88	27.462	
4-Methyloctane	02216-34-4	0.85	3.84	3.258	
sec-Butylbenzene	00135-98-8	2.29	3.69	8.447	
t-2-Nonene	06434-78-2	2.20	3.69	8.103	
1,3-Dimethyl-4-Ethylbenzene	00874-41-9	7.54	3.47	26.167	
Unknown #8		2.20	3.41	7.501	
2,4-Dimethylheptane	02213-23-2	1.26	3.33	4.212	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	3.22	20.301	
Isobutylbenzene	00538-93-2	2.20	3.16	6.942	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	3.15	12.028	
3-Methyloctane	02216-33-3	0.88	3.08	2.722	
t-4-Octene	14850-23-8	4.69	3.03	14.222	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	2.95	28.756	
n-Nonane	00111-84-2	0.68	2.56	1.750	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	1.78	1.523	
1,1-Dimethylcyclohexane	00590-66-9	1.12	1.78	1.987	
t-1,4-Dimethylcyclohexane	02207-04-7	2.20	1.36	3.000	
Unknown #6		2.20	1.33	2.917	
		Total	40098.4	88163.2	2.199
No MIR available, use weighted average of 2.1987					

Vehicle 220b - Fuel 9 psi E0 - Dynamic - Test 25789					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	269.58	365.257	
Cyclohexane	00110-82-7	1.14	260.03	295.753	
Toluene	00108-88-3	3.93	257.58	1011.006	
n-Butane	00106-97-8	1.08	243.42	262.141	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	149.78	179.600	
n-Hexane	00110-54-3	1.13	95.00	107.789	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	88.81	124.131	
2,3,4-Trimethylpentane	00565-75-3	0.95	66.17	62.789	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	64.02	343.730	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	63.74	494.302	
3-Methylpentane	00096-14-0	1.69	63.57	107.495	
2,3-Dimethylbutane	00079-29-8	0.90	47.93	43.072	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	45.43	199.609	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	44.81	330.946	
Methylcyclopentane	00096-37-7	2.05	37.42	76.698	
n-Pentane	00109-66-0	1.21	36.38	44.193	
2,2,5-Trimethylhexane	03522-94-9	1.05	31.69	33.371	
2,4-Dimethylpentane	00108-08-7	1.46	30.13	43.974	
2-Methyl-2-butene	00513-35-9	14.20	27.27	387.108	
Benzene	00071-43-2	0.69	27.23	18.910	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	25.76	82.203	
2-Methylhexane	00591-76-4	1.09	25.42	27.584	
2,3-Dimethylpentane	00565-59-3	1.25	23.79	29.697	
1,3,5-Trimethylbenzene	00108-67-8	11.75	22.93	269.521	
t-2-Pentene	00646-04-8	10.47	21.86	228.949	
2,4-Dimethylhexane	00589-43-5	1.61	20.69	33.226	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	20.23	32.484	
n-Heptane	00142-82-5	0.97	17.15	16.560	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	15.59	86.382	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	15.37	81.438	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	14.53	15.864	
2-Methyl-1-butene	00563-46-2	6.38	14.15	90.287	
c-2-Pentene	00627-20-3	10.28	13.59	139.745	
n-Propylbenzene	00103-65-1	1.96	13.50	26.459	
ortho-Xylene	00095-47-6	7.58	13.49	102.226	
2,3,5-Trimethylhexane	01069-53-0	1.12	11.40	12.776	
Unknown #16		2.79	10.86	30.361	
3-Methyl-t-2-pentene	00616-12-6	11.66	10.58	123.391	
t-2-Hexene	04050-45-7	8.55	10.58	90.470	
t-1,2-Dimethylcyclopentane	00822-50-4	2.79	8.58	23.992	
Ethylbenzene	00100-41-4	2.96	8.30	24.591	
1,2,3-Trimethylbenzene	00526-73-8	11.94	8.25	98.453	
3-Methylheptane	00589-81-1	1.12	8.11	9.123	
2,2-Dimethylbutane	00075-83-2	1.11	8.02	8.911	

Vehicle 220b - Fuel 9 psi E0 - Dynamic - Test 25789 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methylcyclopentene	00693-89-0	12.45	7.71	96.014	
2-Methyl-2-pentene	00625-27-4	11.03	6.97	76.909	
c-1,3-Dimethylcyclopentane	02532-58-3	2.79	6.85	19.131	
Methylcyclohexane	00108-87-2	1.56	6.78	10.541	
3-Methyl-c-2-pentene	00922-62-3	12.52	6.59	82.532	
Cyclopentene	00142-29-0	6.69	6.52	43.578	
2,2-Dimethylpentane	00590-35-2	1.04	6.13	6.393	
n-Octane	00111-65-9	0.80	5.67	4.516	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	5.34	62.538	
2-Methylheptane	00592-27-8	0.97	4.84	4.683	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	4.54	29.964	
		Total	2380.7	6653.4	2.795
No MIR available, use weighted average of 2.7947					

Vehicle 220b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7657

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Cyclohexane	00110-82-7	1.14	2643.58	3006.714	
2-Methylbutane (Isopentane)	00078-78-4	1.35	2560.63	3469.363	
Toluene	00108-88-3	3.93	1916.57	7522.592	
n-Butane	00106-97-8	1.08	1875.86	2020.143	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1562.98	1874.200	
n-Hexane	00110-54-3	1.13	980.68	1112.754	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	910.28	1272.376	
3-Methylpentane	00096-14-0	1.69	648.42	1096.390	
2,3,4-Trimethylpentane	00565-75-3	0.95	639.78	607.049	
2,3-Dimethylbutane	00079-29-8	0.90	481.07	432.339	
Methylcyclopentane	00096-37-7	2.05	403.11	826.281	
2,4-Dimethylpentane	00108-08-7	1.46	307.60	448.886	
n-Pentane	00109-66-0	1.21	285.38	346.713	
2,2,5-Trimethylhexane	03522-94-9	1.05	264.19	278.202	
2-Methyl-2-butene	00513-35-9	14.20	259.61	3685.166	
2,4-Dimethylhexane	00589-43-5	1.61	259.46	416.578	
2,3-Dimethylpentane	00565-59-3	1.25	250.68	312.927	
2-Methylhexane	00591-76-4	1.09	249.85	271.132	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	230.04	1784.097	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	227.46	725.803	
Benzene	00071-43-2	0.69	216.35	150.224	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	190.62	306.007	
t-2-Pentene	00646-04-8	10.47	186.84	1956.837	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	139.34	152.175	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	134.72	723.366	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	116.89	863.338	
2-Methyl-1-butene	00563-46-2	6.38	108.96	695.021	
c-2-Pentene	00627-20-3	10.28	102.93	1058.279	
n-Heptane	00142-82-5	0.97	102.71	99.194	
t-2-Hexene	04050-45-7	8.55	102.09	872.758	
3-Methyl-t-2-pentene	00616-12-6	11.66	100.99	1177.529	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	91.64	485.539	
3-Methyl-c-2-pentene	00922-62-3	12.52	79.20	991.387	
1-Methylcyclopentene	00693-89-0	12.45	78.94	983.143	
2-Methyl-2-pentene	00625-27-4	11.03	76.89	848.310	
ortho-Xylene	00095-47-6	7.58	71.30	540.145	
2,2-Dimethylbutane	00075-83-2	1.11	70.51	78.350	
Methylcyclohexane	00108-87-2	1.56	68.87	107.119	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	61.04	714.439	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	59.85	395.408	
t-1,2-Dimethylcyclopentane	00822-50-4	2.43	57.32	139.397	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	55.08	242.007	
1,3,5-Trimethylbenzene	00108-67-8	11.75	53.20	625.384	
Ethylbenzene	00100-41-4	2.96	46.59	138.042	

Vehicle 220b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7657 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
3-Methylheptane	00589-81-1	1.12	45.74	51.435	
c-1,3-Dimethylcyclopentane	02532-58-3	2.43	43.12	104.879	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	42.72	236.717	
2,2-Dimethylpentane	00590-35-2	1.04	41.75	43.552	
Cyclopentene	00142-29-0	6.69	40.07	267.923	
2-Methylheptane	00592-27-8	0.97	37.77	36.528	
2,3,5-Trimethylhexane	01069-53-0	1.12	36.96	41.403	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	32.03	185.086	
n-Propylbenzene	00103-65-1	1.96	31.02	60.784	
Unknown #16		2.43	30.74	74.756	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	27.90	218.631	
Unknown #5		2.43	27.82	67.658	
2,2,3-Trimethylbutane	00464-06-2	1.05	27.03	28.489	
c-2-Butene	00590-18-1	14.26	25.69	366.299	
Unknown #13		2.43	25.22	61.328	
n-Octane	00111-65-9	0.80	24.50	19.510	
3,5-Dimethylheptane	00926-82-9	1.42	21.65	30.814	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	21.10	149.450	
3,3-Dimethylpentane	00562-49-2	1.12	19.22	21.501	
4-Isopropyltoluene (p-Cymene)	00099-87-6	4.41	19.13	84.333	
1-Nonene	00124-11-8	2.49	18.27	45.552	
Isopropylbenzene (Cumene)	00098-82-8	2.43	16.68	40.569	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	15.26	58.935	
c-1,3-Dimethylcyclohexane	00638-04-0	2.43	13.16	32.011	
1-Methyl-2-Propylbenzene	01074-17-5	5.43	12.74	69.217	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	12.63	100.326	
4-Methyl-t-2-pentene	00674-76-0	8.04	11.84	95.172	
c-2-Heptene	06443-92-1	7.08	11.62	82.195	
4-Methyloctane	02216-34-4	0.85	10.95	9.285	
3,3-Dimethylhexane	00563-16-6	1.15	10.20	11.750	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	10.07	63.469	
1,4-Diethylbenzene	00105-05-5	4.39	10.01	43.930	
Unknown #8		2.43	9.65	23.458	
t-2-Nonene	06434-78-2	2.43	9.55	23.237	
Indan	00496-11-7	3.23	9.50	30.729	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	9.20	7.857	
3-Methyloctane	02216-33-3	0.88	8.89	7.868	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.43	8.64	21.015	
t-3-Heptene	14686-14-7	6.17	7.93	48.926	
1,1-Dimethylcyclohexane	00590-66-9	1.12	7.74	8.626	
2,4-Dimethylheptane	02213-23-2	1.26	7.68	9.718	
3-Methylnonane		2.43	7.56	18.381	

Vehicle 220b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7657 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
t-4-Octene	14850-23-8	4.69	7.39	34.647	
n-Decane	00124-18-5	0.59	7.29	4.307	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	6.96	45.553	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	6.05	45.571	
1-Heptene	00592-76-7	4.29	5.78	24.769	
1,3-Dimethyl-2-Ethylbenzene	02870-04-4	10.16	5.77	58.588	
n-Nonane	00111-84-2	0.68	5.71	3.898	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	5.47	6.476	
Unknown #3		2.43	5.30	12.892	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	5.12	42.865	
Unknown #6	.	2.43	4.96	12.074	
t-1,4-Dimethylcyclohexane	02207-04-7	2.43	4.39	10.680	
Unknown #9		2.43	4.36	10.594	
sec-Butylbenzene	00135-98-8	2.29	4.19	9.596	
1,3-Diethylbenzene	00141-93-5	7.08	3.76	26.645	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	3.65	27.512	
Unknown #12		2.43	3.45	8.398	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	3.30	12.617	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	3.22	31.463	
Unknown #10		2.43	2.87	6.971	
Unknown #1		2.43	2.77	6.747	
1,3-Dimethyl-4-Ethylbenzene	00874-41-9	7.54	2.66	20.040	
Isobutylbenzene	00538-93-2	2.43	2.58	6.284	
Unknown #14		2.43	2.47	6.000	
c-1,2-Dimethylcyclohexane	02207-01-4	2.43	2.40	5.836	
2-Methyl-1,3-butadiene	00078-79-5	10.48	2.40	25.140	
c-2-Octene	07642-04-8	2.43	2.30	5.606	
Unknown #4		2.43	2.18	5.291	
1,2,3,5-Tetramethylbenzene	00527-53-7	9.26	2.03	18.779	
n-Undecane	01120-21-4	0.52	1.98	1.033	
Unknown #15		2.43	1.77	4.294	
Unknown #7		2.43	1.60	3.895	
2,2-Dimethyloctane	15869-87-1	0.76	1.48	1.119	
Unknown #11		2.43	1.41	3.435	
c- & t-4-Nonene	02198-23-4	4.42	1.38	6.097	
Naphthalene	00091-20-3	3.28	1.26	4.141	
1,2-Diethylbenzene	00135-01-3	5.43	1.20	6.530	
t-2-Octene & t-1,2-DiMeCyHexane	13389-42-9+06876-23-9	5.92	0.82	4.831	
Unknown #18		2.43	0.79	1.918	
1-Undecene	00821-95-4	1.77	0.72	1.281	
Unknown #17		2.43	0.71	1.726	
Unknown #20		2.43	0.49	1.187	
1,3-Butadiene	00106-99-0	12.45	0.42	5.224	
		Total	20327.8	49439.0	2.432
No MIR available, use weighted average of 2.4321					

Vehicle 220b - Fuel 7 psi E0 - 86°F Static - Test 7677

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	4755.33	6442.941	
n-Butane	00106-97-8	1.08	2804.48	3020.183	
Cyclohexane	00110-82-7	1.14	947.18	1077.287	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	621.17	868.257	
n-Hexane	00110-54-3	1.13	484.59	549.854	
n-Pentane	00109-66-0	1.21	410.06	498.199	
3-Methylpentane	00096-14-0	1.69	387.85	655.811	
Toluene	00108-88-3	3.93	372.27	1461.151	
2,3-Dimethylbutane	00079-29-8	0.90	355.33	319.334	
2-Methyl-2-butene	00513-35-9	14.20	324.01	4599.304	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	301.05	360.994	
t-2-Pentene	00646-04-8	10.47	250.71	2625.789	
Methylcyclopentane	00096-37-7	2.05	184.42	378.029	
2-Methyl-1-butene	00563-46-2	6.38	171.45	1093.593	
c-2-Pentene	00627-20-3	10.28	136.37	1402.106	
Benzene	00071-43-2	0.69	106.54	73.980	
2,4-Dimethylpentane	00108-08-7	1.46	106.52	155.451	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	100.97	1181.827	
t-2-Butene	00624-64-6	15.20	100.03	1520.254	
2-Methylpropane	00075-28-5	1.18	85.84	101.004	
2,3,4-Trimethylpentane	00565-75-3	0.95	85.48	81.106	
c-2-Butene	00590-18-1	14.26	80.09	1142.038	
2,2-Dimethylbutane	00075-83-2	1.11	67.79	75.333	
2,3-Dimethylpentane	00565-59-3	1.25	64.83	80.930	
2-Methylhexane	00591-76-4	1.09	63.09	68.467	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	55.59	177.379	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	55.45	293.784	
t-2-Hexene	04050-45-7	8.55	51.07	436.554	
3-Methyl-t-2-pentene	00616-12-6	11.66	50.32	586.652	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	48.47	384.874	
Cyclopentene	00142-29-0	6.69	41.68	278.641	
2-Methyl-2-pentene	00625-27-4	11.03	39.73	438.373	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	38.65	299.777	
2,4-Dimethylhexane	00589-43-5	1.61	38.17	61.289	
3-Methyl-c-2-pentene	00922-62-3	12.52	35.89	449.291	
1-Methylcyclopentene	00693-89-0	12.45	31.28	389.566	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	29.72	196.364	
3-Methyl-1-butene	00563-45-1	6.85	29.26	200.602	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	27.02	43.375	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	25.91	149.689	
2,2,5-Trimethylhexane	03522-94-9	1.05	25.85	27.217	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	23.67	127.097	
n-Heptane	00142-82-5	0.97	20.24	19.545	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	19.56	144.444	

Vehicle 220b - Fuel 7 psi E0 - 86°F Static - Test 7677 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	18.02	19.684	
2,2-Dimethylpentane	00590-35-2	1.04	15.21	15.867	
t-1,2-Dimethylcyclopentane	00822-50-4	2.47	14.33	35.462	
Methylcyclohexane	00108-87-2	1.56	13.88	21.584	
Propane	00074-98-6	0.46	12.18	5.566	
ortho-Xylene	00095-47-6	7.58	11.75	89.001	
c-1,3-Dimethylcyclopentane	02532-58-3	2.47	11.09	27.448	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	10.96	48.171	
2,2,3-Trimethylbutane	00464-06-2	1.05	9.83	10.358	
1,3,5-Trimethylbenzene	00108-67-8	11.75	8.91	104.686	
Ethylbenzene	00100-41-4	2.96	7.71	22.846	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	6.71	37.180	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	6.23	48.793	
3,3-Dimethylpentane	00562-49-2	1.12	5.94	6.647	
n-Propylbenzene	00103-65-1	1.96	5.02	9.845	
3-Methylheptane	00589-81-1	1.12	4.75	5.346	
2-Methylheptane	00592-27-8	0.97	4.75	4.593	
Unknown #1		2.47	3.83	9.486	
2,3,5-Trimethylhexane	01069-53-0	1.12	3.78	4.230	
Unknown #5		2.47	3.68	9.114	
1,2,3-Trimethylbenzene	00526-73-8	11.94	3.44	41.119	
2-Methyl-1,3-butadiene	00078-79-5	10.48	3.43	35.917	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	3.22	22.771	
c-2-Heptene	06443-92-1	7.08	3.08	21.773	
1,4-Diethylbenzene	00105-05-5	4.39	2.93	12.842	
Unknown #16		2.47	2.84	7.037	
1-Methyl-2-Propylbenzene	01074-17-5	5.43	2.74	14.882	
n-Octane	00111-65-9	0.80	2.45	1.953	
Unknown #13		2.47	2.19	5.412	
c-1,3-Dimethylcyclohexane	00638-04-0	2.47	1.97	4.879	
3,5-Dimethylheptane	00926-82-9	1.42	1.89	2.696	
t-3-Heptene	14686-14-7	6.17	1.77	10.938	
Indan	00496-11-7	3.23	1.76	5.679	
Isopropylbenzene (Cumene)	00098-82-8	2.47	1.62	4.011	
3,3-Dimethylhexane	00563-16-6	1.15	1.60	1.839	
1-Nonene	00124-11-8	2.49	1.50	3.745	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	1.50	9.792	
Unknown #3		2.47	1.34	3.307	
n-Decane	00124-18-5	0.59	1.33	0.785	
1-Heptene	00592-76-7	4.29	1.30	5.592	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	1.26	9.470	
1,3-Dimethyl-2-Ethylbenzene	02870-04-4	10.16	1.26	12.762	

Vehicle 220b - Fuel 7 psi E0 - 86°F Static - Test 7677 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	1.23	9.243	
4-Methyloctane	02216-34-4	0.85	1.13	0.955	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	1.08	6.796	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	1.05	8.796	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	1.02	0.872	
2,4-Dimethylheptane	02213-23-2	1.26	0.92	1.164	
1,1-Dimethylcyclohexane	00590-66-9	1.12	0.92	1.023	
3-Methyloctane	02216-33-3	0.88	0.89	0.789	
t-2-Nonene	06434-78-2	2.47	0.86	2.129	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.47	0.83	2.066	
1,2-Diethylbenzene	00135-01-3	5.43	0.77	4.211	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	0.76	7.439	
sec-Butylbenzene	00135-98-8	2.29	0.75	1.712	
t-4-Octene	14850-23-8	4.69	0.75	3.499	
1,3-Dimethyl-4-Ethylbenzene	00874-41-9	7.54	0.71	5.387	
Isobutylbenzene	00538-93-2	2.47	0.71	1.750	
t-1,4-Dimethylcyclohexane	02207-04-7	2.47	0.68	1.685	
Unknown #8		2.47	0.67	1.656	
3-Methylnonane		2.47	0.61	1.522	
Unknown #6	.	2.47	0.60	1.495	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	0.59	0.698	
n-Nonane	00111-84-2	0.68	0.58	0.394	
1,3-Butadiene	00106-99-0	12.45	0.48	5.925	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.44	1.689	
1,3-Diethylbenzene	00141-93-5	7.08	0.40	2.835	
Unknown #4		2.47	0.20	0.503	
1-Butyne	00107-00-6	6.05	0.15	0.893	
n-Undecane	01120-21-4	0.52	0.01	0.004	
		Total	14299.8	35390.0	2.475
No MIR available, use weighted average of 2.4749					

Vehicle 220b - Fuel 7 psi E0 - 105°F Static - Test 7680

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	8764.59	11875.037	
n-Butane	00106-97-8	1.08	4859.64	5233.408	
Cyclohexane	00110-82-7	1.14	2002.13	2277.155	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1243.11	1737.602	
n-Hexane	00110-54-3	1.13	1001.50	1136.376	
Toluene	00108-88-3	3.93	856.61	3362.204	
3-Methylpentane	00096-14-0	1.69	784.45	1326.408	
n-Pentane	00109-66-0	1.21	777.45	944.548	
2,3-Dimethylbutane	00079-29-8	0.90	701.05	630.032	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	669.74	803.101	
2-Methyl-2-butene	00513-35-9	14.20	622.22	8832.412	
t-2-Pentene	00646-04-8	10.47	478.46	5011.111	
Methylcyclopentane	00096-37-7	2.05	380.82	780.590	
2-Methyl-1-butene	00563-46-2	6.38	321.47	2050.481	
c-2-Pentene	00627-20-3	10.28	259.21	2665.056	
2,4-Dimethylpentane	00108-08-7	1.46	223.75	326.528	
Benzene	00071-43-2	0.69	222.99	154.832	
2,3,4-Trimethylpentane	00565-75-3	0.95	197.80	187.675	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	182.54	2136.613	
t-2-Butene	00624-64-6	15.20	173.16	2631.622	
2-Methylpropane	00075-28-5	1.18	145.88	171.641	
c-2-Butene	00590-18-1	14.26	140.52	2003.758	
2,3-Dimethylpentane	00565-59-3	1.25	139.41	174.023	
2-Methylhexane	00591-76-4	1.09	136.67	148.308	
2,2-Dimethylbutane	00075-83-2	1.11	130.26	144.744	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	121.08	386.346	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	111.34	589.945	
t-2-Hexene	04050-45-7	8.55	104.95	897.210	
3-Methyl-t-2-pentene	00616-12-6	11.66	103.39	1205.434	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	88.68	687.753	
2,4-Dimethylhexane	00589-43-5	1.61	87.44	140.389	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	82.16	652.441	
2-Methyl-2-pentene	00625-27-4	11.03	81.05	894.128	
Cyclopentene	00142-29-0	6.69	80.05	535.205	
3-Methyl-c-2-pentene	00922-62-3	12.52	74.65	934.484	
1-Methylcyclopentene	00693-89-0	12.45	64.97	809.151	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	62.40	100.167	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	60.71	401.110	
2,2,5-Trimethylhexane	03522-94-9	1.05	60.21	63.401	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	53.31	286.254	
3-Methyl-1-butene	00563-45-1	6.85	52.13	357.334	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	49.14	283.915	
n-Heptane	00142-82-5	0.97	46.07	44.496	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	41.17	44.963	

Vehicle 220b - Fuel 7 psi E0 - 105°F Static - Test 7680 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	34.81	257.119	
2,2-Dimethylpentane	00590-35-2	1.04	31.12	32.463	
2,2-DiMeHexane	00590-73-8	0.94	30.50	28.708	
t-1,2-Dimethylcyclopentane	00822-50-4	2.49	30.41	75.650	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	25.50	112.051	
ortho-Xylene	00095-47-6	7.58	25.49	193.083	
c-1,3-Dimethylcyclopentane	02532-58-3	2.49	24.11	59.989	
2,2,3-Trimethylbutane	00464-06-2	1.05	19.96	21.034	
1,3,5-Trimethylbenzene	00108-67-8	11.75	18.93	222.525	
Ethylbenzene	00100-41-4	2.96	18.75	55.552	
Propane	00074-98-6	0.46	17.08	7.807	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	15.81	87.588	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	13.54	106.125	
3,3-Dimethylpentane	00562-49-2	1.12	12.18	13.631	
3-Methylheptane	00589-81-1	1.12	11.62	13.065	
n-Propylbenzene	00103-65-1	1.96	11.09	21.728	
2-Methylheptane	00592-27-8	0.97	10.73	10.378	
2,3,5-Trimethylhexane	01069-53-0	1.12	8.22	9.211	
1,2,3-Trimethylbenzene	00526-73-8	11.94	8.12	96.945	
Unknown #5		2.49	7.44	18.522	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	6.90	48.873	
Unknown #16		2.49	6.77	16.834	
Unknown #1		2.49	6.51	16.201	
c-2-Heptene	06443-92-1	7.08	6.38	45.146	
2-Methyl-1,3-butadiene	00078-79-5	10.48	5.97	62.552	
n-Octane	00111-65-9	0.80	5.77	4.594	
Indan	00496-11-7	3.23	4.77	15.423	
3,5-Dimethylheptane	00926-82-9	1.42	4.70	6.691	
Unknown #13		2.49	4.20	10.457	
Isopropylbenzene (Cumene)	00098-82-8	2.49	4.09	10.165	
1,4-Diethylbenzene	00105-05-5	4.39	4.01	17.618	
t-3-Heptene	14686-14-7	6.17	3.92	24.203	
3,3-Dimethylhexane	00563-16-6	1.15	3.34	3.850	
1-Methyl-2-Propylbenzene	01074-17-5	5.43	3.21	17.438	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	3.20	20.966	
1-Nonene	00124-11-8	2.49	2.97	7.402	
c-1,3-Dimethylcyclohexane	00638-04-0	2.49	2.91	7.235	
1-Heptene	00592-76-7	4.29	2.89	12.404	
Unknown #3		2.49	2.77	6.884	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	2.54	2.165	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.49	2.47	6.155	
Unknown #6	.	2.49	2.46	6.112	

Vehicle 220b - Fuel 7 psi E0 - 105°F Static - Test 7680 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	2.28	19.076	
4-Methyloctane	02216-34-4	0.85	2.02	1.718	
3-Methyloctane	02216-33-3	0.88	1.95	1.728	
1,1-Dimethylcyclohexane	00590-66-9	1.12	1.91	2.134	
1,3-Dimethyl-2-Ethylbenzene	02870-04-4	10.16	1.88	19.101	
2,4-Dimethylheptane	02213-23-2	1.26	1.79	2.268	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	1.70	12.806	
Unknown #8		2.49	1.67	4.151	
n-Decane	00124-18-5	0.59	1.62	0.959	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	1.60	6.123	
sec-Butylbenzene	00135-98-8	2.29	1.54	3.525	
3-Methylnonane		2.49	1.53	3.819	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	1.52	14.836	
t-2-Nonene	06434-78-2	2.49	1.48	3.680	
1,2,3,5-Tetramethylbenzene	00527-53-7	9.26	1.35	12.506	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	1.31	8.240	
t-1,4-Dimethylcyclohexane	02207-04-7	2.49	1.25	3.099	
Isobutylbenzene	00538-93-2	2.49	1.12	2.787	
n-Nonane	00111-84-2	0.68	1.09	0.745	
1,3-Dimethyl-4-Ethylbenzene	00874-41-9	7.54	1.02	7.716	
1,3-Butadiene	00106-99-0	12.45	0.98	12.253	
1,3-Diethylbenzene	00141-93-5	7.08	0.84	5.927	
c-1,2-Dimethylcyclohexane	02207-01-4	2.49	0.82	2.033	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	0.80	0.947	
Unknown #9		2.49	0.80	1.990	
1,2,4,5-Tetramethylbenzene	00095-93-2	9.26	0.67	6.186	
c-2-Octene	07642-04-8	2.49	0.66	1.635	
4-Isopropyltoluene (p-Cymene)	00099-87-6	4.41	0.62	2.753	
Unknown #12		2.49	0.49	1.207	
Unknown #4		2.49	0.42	1.044	
n-Butylbenzene	00104-51-8	2.29	0.36	0.815	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.28	2.080	
n-Undecane	01120-21-4	0.52	0.25	0.132	
2,2-Dimethyloctane	15869-87-1	0.76	0.20	0.148	
		Total	27348.3	68042.1	2.488
No MIR available, use weighted average of 2.4880					

Vehicle 220b - Fuel 7 psi E0 - Dynamic - Test 25794					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Cyclohexane	00110-82-7	1.14	385.12	438.025	
2-Methylbutane (Isopentane)	00078-78-4	1.35	371.97	503.974	
Toluene	00108-88-3	3.93	351.94	1381.382	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	199.68	1072.127	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	196.81	235.994	
n-Butane	00106-97-8	1.08	143.43	154.461	
n-Hexane	00110-54-3	1.13	122.85	139.394	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	114.17	159.587	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	106.45	825.559	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	94.05	694.666	
2,3,4-Trimethylpentane	00565-75-3	0.95	88.91	84.360	
3-Methylpentane	00096-14-0	1.69	80.49	136.094	
1,3,5-Trimethylbenzene	00108-67-8	11.75	68.09	800.358	
2,3-Dimethylbutane	00079-29-8	0.90	65.49	58.855	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	58.20	255.720	
Methylcyclopentane	00096-37-7	2.05	51.19	104.920	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	44.35	245.761	
2,4-Dimethylhexane	00589-43-5	1.61	42.97	68.998	
n-Pentane	00109-66-0	1.21	41.09	49.916	
2,2,5-Trimethylhexane	03522-94-9	1.05	40.84	43.009	
ortho-Xylene	00095-47-6	7.58	38.61	292.515	
2,4-Dimethylpentane	00108-08-7	1.46	37.61	54.882	
1,2,3-Trimethylbenzene	00526-73-8	11.94	37.49	447.540	
2-Methyl-2-butene	00513-35-9	14.20	36.06	511.918	
Benzene	00071-43-2	0.69	34.66	24.065	
2-Methylhexane	00591-76-4	1.09	33.50	36.352	
2,3-Dimethylpentane	00565-59-3	1.25	32.54	40.619	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	32.38	103.320	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	32.04	226.874	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	31.29	50.239	
n-Propylbenzene	00103-65-1	1.96	29.23	57.280	
Ethylbenzene	00100-41-4	2.96	28.70	85.018	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	25.25	27.573	
t-2-Pentene	00646-04-8	10.47	23.93	250.683	
Unknown #16		3.47	22.78	78.988	
Indan	00496-11-7	3.23	22.56	72.974	
1-Methyl-2-Propylbenzene	01074-17-5	5.43	22.10	120.098	
n-Heptane	00142-82-5	0.97	18.55	17.912	
c-2-Pentene	00627-20-3	10.28	18.19	187.043	
2-Methyl-1-butene	00563-46-2	6.38	16.70	106.517	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	16.17	121.897	
1,3-Dimethyl-2-Ethylbenzene	02870-04-4	10.16	16.08	163.373	
t-2-Hexene	04050-45-7	8.55	15.50	132.535	
3-Methyl-t-2-pentene	00616-12-6	11.66	15.37	179.197	

Vehicle 220b - Fuel 7 psi E0 - Dynamic - Test 25794 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	14.81	78.469	
1,4-Diethylbenzene	00105-05-5	4.39	13.00	57.054	
3-Methyl-c-2-pentene	00922-62-3	12.52	12.48	156.261	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	12.47	145.965	
n-Decane	00124-18-5	0.59	12.41	7.332	
2-Methyl-2-pentene	00625-27-4	11.03	12.19	134.512	
2,2-DiMeHexane	00590-73-8	0.94	11.86	11.162	
t-2-Butene	00624-64-6	15.20	11.05	167.884	
1-Methylcyclopentene	00693-89-0	12.45	10.90	135.760	
2,2-Dimethylbutane	00075-83-2	1.11	10.89	12.096	
4-Methyl-t-2-pentene	00674-76-0	8.04	9.93	79.853	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	9.87	65.180	
t-1,2-Dimethylcyclopentane	00822-50-4	3.47	9.69	33.596	
c-2-Butene	00590-18-1	14.26	9.46	134.928	
3-Methylheptane	00589-81-1	1.12	8.28	9.305	
2,3,5-Trimethylhexane	01069-53-0	1.12	8.00	8.961	
n-Octane	00111-65-9	0.80	7.83	6.234	
c-1,3-Dimethylcyclopentane	02532-58-3	3.47	7.27	25.206	
Cyclopentene	00142-29-0	6.69	7.19	48.040	
Isopropylbenzene (Cumene)	00098-82-8	3.47	6.98	24.183	
1,3-Diethylbenzene	00141-93-5	7.08	6.82	48.287	
3-Methylnonane		3.47	6.78	23.518	
2-Methylheptane	00592-27-8	0.97	6.75	6.526	
Styrene	00100-42-5	1.66	6.21	10.321	
2,2-Dimethylpentane	00590-35-2	1.04	6.03	6.288	
n-Nonane	00111-84-2	0.68	5.92	4.042	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	5.74	33.179	
2-Methylpropane	00075-28-5	1.18	5.64	6.634	
Unknown #18		3.47	5.58	19.333	
n-Butylbenzene	00104-51-8	2.29	5.31	12.170	
sec-Butylbenzene	00135-98-8	2.29	5.20	11.924	
1-Undecene	00821-95-4	1.77	5.03	8.924	
Unknown #5		3.47	4.97	17.215	
Ethylcyclohexane	01678-91-7	1.35	4.90	6.587	
2,2,3-Trimethylbutane	00464-06-2	1.05	4.75	5.006	
1-Nonene	00124-11-8	2.49	4.66	11.605	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	4.65	17.766	
c-2-Heptene	06443-92-1	7.08	4.63	32.729	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	4.21	32.961	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	4.15	32.941	
Unknown #24		3.47	4.11	14.244	
4-Isopropyltoluene (p-Cymene)	00099-87-6	4.41	3.96	17.442	

Vehicle 220b - Fuel 7 psi E0 - Dynamic - Test 25794 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Undecane	01120-21-4	0.52	3.70	1.930	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	3.58	26.990	
4-Methyloctane	02216-34-4	0.85	3.58	3.034	
3-Methyl-1-butene	00563-45-1	6.85	3.49	23.934	
1,3-Dimethyl-4-Ethylbenzene	00874-41-9	7.54	3.43	25.884	
Unknown #6	.	3.47	3.30	11.450	
Naphthalene	00091-20-3	3.28	3.24	10.638	
c-1,3-Dimethylcyclohexane	00638-04-0	3.47	3.12	10.809	
3,3-Dimethylpentane	00562-49-2	1.12	3.01	3.372	
Isobutylbenzene	00538-93-2	3.47	2.99	10.375	
1,1-Dimethylcyclohexane	00590-66-9	1.12	2.47	2.756	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	3.47	2.47	8.568	
3,3-Dimethylhexane	00563-16-6	1.15	2.40	2.762	
3-Methyloctane	02216-33-3	0.88	2.35	2.081	
1,2-Diethylbenzene	00135-01-3	5.43	2.08	11.324	
1-Heptene	00592-76-7	4.29	1.78	7.649	
2,4-Dimethylheptane	02213-23-2	1.26	1.78	2.255	
Unknown #8		3.47	1.73	6.005	
Unknown #20		3.47	1.56	5.393	
t-3-Heptene	14686-14-7	6.17	1.52	9.377	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	1.39	1.646	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	1.30	1.107	
2-Methyl-1,3-butadiene	00078-79-5	10.48	1.25	13.100	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	1.23	8.072	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	1.01	6.385	
t-1,4-Dimethylcyclohexane	02207-04-7	3.47	0.92	3.203	
Unknown #1		3.47	0.69	2.389	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.66	5.535	
		Total	3689.9	12792.2	3.467
No MIR available, use weighted average of 3.4668					

Vehicle 220b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7686					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Cyclohexane	00110-82-7	1.14	2781.83	3163.949	
2-Methylbutane (Isopentane)	00078-78-4	1.35	2708.35	3669.503	
Toluene	00108-88-3	3.93	2047.86	8037.885	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1622.66	1945.756	
n-Hexane	00110-54-3	1.13	1029.43	1168.072	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	964.70	1348.439	
n-Butane	00106-97-8	1.08	687.61	740.501	
3-Methylpentane	00096-14-0	1.69	678.06	1146.507	
2,3,4-Trimethylpentane	00565-75-3	0.95	675.28	640.725	
2,3-Dimethylbutane	00079-29-8	0.90	502.21	451.336	
Methylcyclopentane	00096-37-7	2.05	424.33	869.782	
2,4-Dimethylpentane	00108-08-7	1.46	319.31	465.972	
n-Pentane	00109-66-0	1.21	308.39	374.676	
2,2,5-Trimethylhexane	03522-94-9	1.05	281.46	296.395	
2-Methyl-2-butene	00513-35-9	14.20	277.04	3932.600	
2,4-Dimethylhexane	00589-43-5	1.61	273.19	438.626	
2-Methylhexane	00591-76-4	1.09	262.79	285.175	
2,3-Dimethylpentane	00565-59-3	1.25	261.52	326.467	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	251.66	1951.697	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	239.29	763.565	
Benzene	00071-43-2	0.69	230.34	159.937	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	200.68	322.163	
t-2-Pentene	00646-04-8	10.47	197.73	2070.893	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	147.98	161.607	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	137.12	736.236	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	129.98	960.035	
2-Methyl-1-butene	00563-46-2	6.38	115.39	736.039	
n-Heptane	00142-82-5	0.97	114.06	110.154	
c-2-Pentene	00627-20-3	10.28	108.89	1119.567	
t-2-Hexene	04050-45-7	8.55	106.56	910.942	
3-Methyl-t-2-pentene	00616-12-6	11.66	105.14	1225.831	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	99.40	526.683	
2,2-DiMeHexane	00590-73-8	0.94	87.94	82.771	
3-Methyl-c-2-pentene	00922-62-3	12.52	83.41	1044.084	
1-Methylcyclopentene	00693-89-0	12.45	83.19	1036.094	
2-Methyl-2-pentene	00625-27-4	11.03	80.28	885.656	
ortho-Xylene	00095-47-6	7.58	77.18	584.743	
2,2-Dimethylbutane	00075-83-2	1.11	73.59	81.769	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	64.94	760.100	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	62.64	413.807	
t-1,2-Dimethylcyclopentane	00822-50-4	2.55	60.49	154.069	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	56.51	248.325	
1,3,5-Trimethylbenzene	00108-67-8	11.75	55.08	647.405	
Ethylbenzene	00100-41-4	2.96	51.55	152.738	

Vehicle 220b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7686 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
3-Methylheptane	00589-81-1	1.12	48.91	54.991	
c-1,3-Dimethylcyclopentane	02532-58-3	2.55	45.86	116.797	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	44.77	248.123	
2,2-Dimethylpentane	00590-35-2	1.04	43.43	45.301	
Cyclopentene	00142-29-0	6.69	42.07	281.299	
2-Methylheptane	00592-27-8	0.97	40.88	39.541	
2,3,5-Trimethylhexane	01069-53-0	1.12	40.14	44.962	
Unknown #16		2.55	34.81	88.655	
n-Propylbenzene	00103-65-1	1.96	33.47	65.583	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	33.27	192.238	
t-2-Butene	00624-64-6	15.20	31.11	472.786	
Unknown #5		2.55	29.42	74.943	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	29.27	229.309	
2,2,3-Trimethylbutane	00464-06-2	1.05	28.28	29.804	
Unknown #13		2.55	28.17	71.750	
n-Octane	00111-65-9	0.80	28.05	22.333	
c-2-Butene	00590-18-1	14.26	27.58	393.341	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	24.60	174.232	
3,5-Dimethylheptane	00926-82-9	1.42	24.30	34.589	
3,3-Dimethylpentane	00562-49-2	1.12	20.27	22.673	
1-Nonene	00124-11-8	2.49	20.25	50.466	
2-Methylpropane	00075-28-5	1.18	19.01	22.371	
1,2,3-Trimethylbenzene	00526-73-8	11.94	18.87	225.237	
Isopropylbenzene (Cumene)	00098-82-8	2.55	18.22	46.403	
c-1,3-Dimethylcyclohexane	00638-04-0	2.55	14.49	36.919	
3-Methyl-1-butene	00563-45-1	6.85	13.74	94.204	
Unknown #6	.	2.55	13.55	34.503	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	13.24	105.107	
4-Methyloctane	02216-34-4	0.85	12.88	10.923	
c-2-Heptene	06443-92-1	7.08	12.32	87.155	
1-Methyl-2-Propylbenzene	01074-17-5	5.43	11.92	64.785	
Indan	00496-11-7	3.23	11.45	37.045	
3-Methyloctane	02216-33-3	0.88	10.81	9.566	
t-2-Nonene	06434-78-2	2.55	10.74	27.343	
3,3-Dimethylhexane	00563-16-6	1.15	10.69	12.307	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	10.53	8.989	
1,4-Diethylbenzene	00105-05-5	4.39	10.45	45.863	
Unknown #8		2.55	9.67	24.617	
n-Decane	00124-18-5	0.59	9.58	5.660	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.55	9.31	23.719	
2,4-Dimethylheptane	02213-23-2	1.26	8.65	10.938	
1,1-Dimethylcyclohexane	00590-66-9	1.12	8.60	9.584	

Vehicle 220b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7686 **continued**

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
3-Methylnonane		2.55	8.49	21.618	
t-3-Heptene	14686-14-7	6.17	8.37	51.625	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	7.29	47.685	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	7.21	54.349	
1,3-Dimethyl-2-Ethylbenzene	02870-04-4	10.16	6.82	69.284	
2,4-DiMeOctane+AlBenz+PrCyHexane	04032-94-4+00300-57-2+	1.18	6.28	7.432	
1-Heptene	00592-76-7	4.29	6.01	25.778	
n-Nonane	00111-84-2	0.68	5.67	3.868	
Unknown #3		2.55	5.49	13.984	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	5.34	44.723	
1,3-Diethylbenzene	00141-93-5	7.08	5.04	35.723	
t-1,4-Dimethylcyclohexane	02207-04-7	2.55	4.94	12.581	
Unknown #9		2.55	4.74	12.080	
sec-Butylbenzene	00135-98-8	2.29	4.69	10.750	
Methane	00074-82-8	0.01	4.14	0.057	
Unknown #12		2.55	3.66	9.315	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	3.64	13.897	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	3.39	33.053	
n-Butylbenzene	00104-51-8	2.29	3.21	7.359	
Propane	00074-98-6	0.46	3.18	1.454	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	3.14	23.657	
Unknown #10		2.55	2.96	7.543	
Isobutylbenzene	00538-93-2	2.55	2.95	7.503	
1,3-Dimethyl-4-Ethylbenzene	00874-41-9	7.54	2.87	21.607	
Unknown #14		2.55	2.75	7.009	
Ethylene	00074-85-1	8.88	2.65	23.562	
c-1,2-Dimethylcyclohexane	02207-01-4	2.55	2.49	6.350	
c-2-Octene	07642-04-8	2.55	2.45	6.232	
2-Methyl-1,3-butadiene	00078-79-5	10.48	2.44	25.541	
4-Isopropyltoluene (p-Cymene)	00099-87-6	4.41	2.29	10.116	
c- & t-4-Nonene	02198-23-4	4.42	2.21	9.787	
n-Undecane	01120-21-4	0.52	1.88	0.983	
Unknown #7		2.55	1.82	4.626	
t-2-Octene & t-1,2-DiMeCyHexane	13389-42-9+06876-23-9	5.92	1.80	10.689	
Unknown #15		2.55	1.73	4.417	
1,2-Diethylbenzene	00135-01-3	5.43	1.65	8.947	
1,2,3,5-Tetramethylbenzene	00527-53-7	9.26	1.63	15.111	
2,2-Dimethyloctane	15869-87-1	0.76	1.48	1.118	
Unknown #11		2.55	1.42	3.609	

Vehicle 220b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7686 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Unknown #18		2.55	1.39	3.538	
4-Methyl-t-2-pentene	00674-76-0	8.04	1.38	11.125	
Naphthalene	00091-20-3	3.28	1.27	4.165	
Unknown #4		2.55	1.10	2.810	
1,2,4,5-Tetramethylbenzene	00095-93-2	9.26	0.85	7.896	
Unknown #20		2.55	0.60	1.535	
Unknown #19		2.55	0.51	1.292	
Unknown #17		2.55	0.43	1.093	
1,3-Butadiene	00106-99-0	12.45	0.36	4.511	
		Total	20242.7	51559.2	2.547

No MIR available, use weighted average of 2.5471

Vehicle 221b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7557	1592.1	85.9	1367.1	3249.9	2.377	57
Static	E10 - 7 psi	7571	951.42	75.9	722.3	2179.9	3.018	65
	E0 - 9 psi	7650	1390.71	89.8	1248.3	2750.8	2.204	66
	E0 - 7 psi	7691	979.48	114.5	1121.8	2764.8	2.465	72
105° F	E10 - 10 psi	7559	2131.5	92.0	1960.1	4768.7	2.433	79
Static	E10 - 7 psi	7572	1354.2	93.7	1268.7	3796.8	2.993	76
	E0 - 9 psi	7652	1823.3	100.0	1824.1	3993.6	2.189	66
	E0 - 7 psi	7692	1351.9	115.3	1558.2	4073.8	2.614	103
Dynamic	E10 - 10 psi	25778	158.8	97.8	155.3	519.8	3.347	54
	E10 - 7 psi	25783	144.6	118.7	171.6	578.9	3.373	59
	E0 - 9 psi	25790	192.8	161.7	311.8	851.8	2.732	55
	E0 - 7 psi	25797	230.2	88.6	204.1	877.0	4.298	49
DHB	E10 - 10 psi	7562	2254.5	86.6	1952.6	5269.2	2.699	90
Total	E10 - 7 psi	7579	2189.4	85.0	1860.2	5643.5	3.034	104
	E0 - 9 psi	7667	1788.4	90.9	1625.8	4353.4	2.678	83
	E0 - 7 psi	7716	1593.2	103.2	1644.2	4729.0	2.876	92

Vehicle 221b - Fuel 10 psi E10 - 86°F Static - Test 7557

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	507.38	546.399	
2-Methylbutane (Isopentane)	00078-78-4	1.35	244.45	331.201	
Ethanol	00064-17-5	1.45	112.02	162.308	
n-Hexane	00110-54-3	1.13	53.33	60.513	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	47.74	66.732	
n-Pentane	00109-66-0	1.21	38.87	47.229	
3-Methylpentane	00096-14-0	1.69	33.41	56.489	
2-Methyl-2-butene	00513-35-9	14.20	32.15	456.361	
Toluene	00108-88-3	3.93	28.26	110.903	
t-2-Pentene	00646-04-8	10.47	26.46	277.129	
2,3-Dimethylbutane	00079-29-8	0.90	24.22	21.766	
2-Methyl-1-butene	00563-46-2	6.38	19.05	121.508	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	16.89	20.256	
Methylcyclopentane	00096-37-7	2.05	16.25	33.304	
Cyclohexane	00110-82-7	1.14	16.17	18.394	
c-2-Pentene	00627-20-3	10.28	14.57	149.764	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	13.65	159.727	
c-2-Butene	00590-18-1	14.26	10.97	156.379	
Benzene	00071-43-2	0.69	10.09	7.005	
2,4-Dimethylpentane	00108-08-7	1.46	7.20	10.501	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	6.88	54.642	
2-Methylpropane	00075-28-5	1.18	5.57	6.558	
2-Methylhexane	00591-76-4	1.09	5.21	5.656	
Methylcyclohexane	00108-87-2	1.56	5.16	8.021	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	5.10	26.998	
t-2-Hexene	04050-45-7	8.55	4.90	41.861	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	4.87	15.546	
Cyclopentene	00142-29-0	6.69	4.31	28.829	
2,3,4-Trimethylpentane	00565-75-3	0.95	4.12	3.911	
3-Methyl-t-2-pentene	00616-12-6	11.66	4.08	47.578	
2,3-Dimethylpentane	00565-59-3	1.25	3.80	4.741	
2-Methyl-2-pentene	00625-27-4	11.03	3.76	41.465	
3-Methyl-c-2-pentene	00922-62-3	12.52	3.50	43.821	
n-Heptane	00142-82-5	0.97	3.42	3.303	
2,2-Dimethylbutane	00075-83-2	1.11	3.29	3.657	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	3.00	19.794	
2,4-Dimethylhexane	00589-43-5	1.61	2.63	4.222	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	2.43	14.038	
1-Methylcyclopentene	00693-89-0	12.45	2.40	29.841	
2,2-Dimethylpentane	00590-35-2	1.04	1.98	2.069	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	1.85	2.978	
2,2,5-Trimethylhexane	03522-94-9	1.05	1.32	1.389	
t-1,2-Dimethylcyclopentane	00822-50-4	2.38	1.26	2.996	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.25	1.370	

Vehicle 221b - Fuel 10 psi E10 - 86°F Static - Test 7557 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Octane	00111-65-9	0.80	1.09	0.866	
c-1,3-Dimethylcyclopentane	02532-58-3	2.38	1.00	2.387	
2-Methylheptane	00592-27-8	0.97	0.86	0.836	
2,2,3-Trimethylbutane	00464-06-2	1.05	0.85	0.901	
3,3-Dimethylpentane	00562-49-2	1.12	0.83	0.932	
c-1,3-Dimethylcyclohexane	00638-04-0	2.38	0.71	1.680	
3-Methylheptane	00589-81-1	1.12	0.64	0.715	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.55	5.749	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.46	3.580	
Unknown #5		2.38	0.26	0.625	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.25	0.970	
t-1,4-Dimethylcyclohexane	02207-04-7	2.38	0.20	0.482	
t-3-Heptene	14686-14-7	6.17	0.17	1.037	
		Total	1367.1	3249.9	2.377
No MIR available, use weighted average of 2.3773					

Vehicle 221b - Fuel 10 psi E10 - 105°F Static - Test 7559					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	654.61	704.963	
2-Methylbutane (Isopentane)	00078-78-4	1.35	330.02	447.133	
Ethanol	00064-17-5	1.45	199.28	288.754	
n-Hexane	00110-54-3	1.13	80.10	90.882	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	69.35	96.933	
n-Pentane	00109-66-0	1.21	53.77	65.332	
Toluene	00108-88-3	3.93	49.46	194.113	
3-Methylpentane	00096-14-0	1.69	48.75	82.430	
2-Methyl-2-butene	00513-35-9	14.20	45.60	647.285	
t-2-Pentene	00646-04-8	10.47	37.84	396.335	
2,3-Dimethylbutane	00079-29-8	0.90	35.30	31.727	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	27.98	33.546	
2-Methyl-1-butene	00563-46-2	6.38	25.93	165.410	
Methylcyclopentane	00096-37-7	2.05	25.14	51.537	
Cyclohexane	00110-82-7	1.14	24.77	28.177	
c-2-Pentene	00627-20-3	10.28	20.58	211.612	
Benzene	00071-43-2	0.69	15.99	11.101	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	15.19	177.840	
c-2-Butene	00590-18-1	14.26	14.09	200.980	
2,4-Dimethylpentane	00108-08-7	1.46	11.42	16.661	
2-Methylhexane	00591-76-4	1.09	9.62	10.435	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	8.82	70.036	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	8.51	65.987	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	8.38	26.727	
Methylcyclohexane	00108-87-2	1.56	7.88	12.255	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	7.69	40.730	
2,3,4-Trimethylpentane	00565-75-3	0.95	7.54	7.157	
t-2-Hexene	04050-45-7	8.55	7.41	63.364	
2-Methylpropane	00075-28-5	1.18	6.78	7.979	
2,3-Dimethylpentane	00565-59-3	1.25	6.54	8.161	
n-Heptane	00142-82-5	0.97	6.22	6.005	
Cyclopentene	00142-29-0	6.69	6.20	41.456	
3-Methyl-t-2-pentene	00616-12-6	11.66	6.04	70.384	
2-Methyl-2-pentene	00625-27-4	11.03	5.67	62.532	
3-Methyl-c-2-pentene	00922-62-3	12.52	5.31	66.467	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	4.48	24.042	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	4.47	29.525	
2,2-Dimethylbutane	00075-83-2	1.11	4.28	4.759	
1-Methylcyclopentene	00693-89-0	12.45	3.91	48.731	
2,4-Dimethylhexane	00589-43-5	1.61	3.55	5.700	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	3.33	19.258	
2,2-Dimethylpentane	00590-35-2	1.04	2.78	2.896	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	2.66	4.272	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.56	11.235	

Vehicle 221b - Fuel 10 psi E10 - 105°F Static - Test 7559 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
ortho-Xylene	00095-47-6	7.58	2.41	18.246	
2,2,5-Trimethylhexane	03522-94-9	1.05	2.10	2.215	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.99	23.409	
t-1,2-Dimethylcyclopentane	00822-50-4	2.43	1.99	4.842	
n-Octane	00111-65-9	0.80	1.90	1.511	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.89	2.067	
Ethylbenzene	00100-41-4	2.96	1.66	4.914	
c-1,3-Dimethylcyclopentane	02532-58-3	2.43	1.64	3.978	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.41	1.491	
Propane	00074-98-6	0.46	1.41	0.643	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	1.33	9.834	
3,3-Dimethylpentane	00562-49-2	1.12	1.29	1.440	
2-Methylheptane	00592-27-8	0.97	1.25	1.205	
3-Methylheptane	00589-81-1	1.12	1.20	1.352	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.15	6.399	
c-1,3-Dimethylcyclohexane	00638-04-0	2.43	0.92	2.242	
n-Propylbenzene	00103-65-1	1.96	0.92	1.801	
2,2-DiMeHexane	00590-73-8	0.94	0.80	0.754	
n-Decane	00124-18-5	0.59	0.75	0.441	
n-Nonane	00111-84-2	0.68	0.62	0.426	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.58	6.893	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.55	4.296	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.49	5.122	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.48	1.854	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.43	0.42	1.031	
Unknown #5		2.43	0.41	1.005	
t-3-Heptene	14686-14-7	6.17	0.36	2.224	
Unknown #16		2.43	0.36	0.873	
3,3-Dimethylhexane	00563-16-6	1.15	0.36	0.411	
3,5-Dimethylheptane	00926-82-9	1.42	0.33	0.475	
4-Methyloctane	02216-34-4	0.85	0.31	0.265	
1-Nonene	00124-11-8	2.49	0.27	0.672	
t-1,4-Dimethylcyclohexane	02207-04-7	2.43	0.25	0.619	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.25	0.283	
Unknown #3		2.43	0.25	0.606	
		Total	1960.1	4768.7	2.433
No MIR available, use weighted average of 2.4329					

Vehicle 221b - Fuel 10 psi E10 - Dynamic - Test 25778

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Propylbenzene	00103-65-1	1.96	35.68	69.925	
Toluene	00108-88-3	3.93	18.49	72.586	
Ethanol	00064-17-5	1.45	15.22	22.056	
Methane	00074-82-8	0.01	9.22	0.128	
Unknown #22	.	3.35	6.27	20.981	
Benzene	00071-43-2	0.69	5.45	3.787	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	4.89	37.958	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	4.88	26.179	
Propane	00074-98-6	0.46	3.47	1.588	
1-Butyne	00107-00-6	6.05	3.03	18.355	
ortho-Xylene	00095-47-6	7.58	2.57	19.460	
2,3,5-Trimethylhexane	01069-53-0	1.12	2.49	2.787	
Cyclohexane	00110-82-7	1.14	2.44	2.778	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.25	9.872	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	2.11	11.157	
Indan	00496-11-7	3.23	2.07	6.692	
2,2-DiMeHexane	00590-73-8	0.94	2.03	1.914	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.91	22.476	
n-Hexane	00110-54-3	1.13	1.90	2.152	
3-Methyl-c-2-pentene	00922-62-3	12.52	1.83	22.931	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.77	21.115	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.66	1.994	
n-Decane	00124-18-5	0.59	1.63	0.963	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	1.60	10.573	
1,3-Butadiene	00106-99-0	12.45	1.45	18.033	
2,4-Dimethylhexane	00589-43-5	1.61	1.38	2.221	
2-Methyl-2-pentene	00625-27-4	11.03	1.37	15.100	
2,2-Dimethylpentane	00590-35-2	1.04	1.18	1.233	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	1.11	7.827	
3-Methyl-t-2-pentene	00616-12-6	11.66	1.01	11.784	
2-Methylheptane	00592-27-8	0.97	0.94	0.910	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.91	5.033	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.91	9.504	
n-Undecane	01120-21-4	0.52	0.89	0.467	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.85	0.932	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	0.77	5.775	
c-1,3-Dimethylcyclopentane	02532-58-3	3.35	0.74	2.467	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.72	0.685	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.72	5.686	
t-2-Hexene	04050-45-7	8.55	0.72	6.120	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.69	1.111	
Methylcyclohexane	00108-87-2	1.56	0.66	1.025	
3-Methylnonane	05911-04-6	0.66	0.56	0.367	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.52	0.552	

Vehicle 221b - Fuel 10 psi E10 - Dynamic - Test 25778 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethylbenzene	00100-41-4	2.96	0.52	1.534	
2-Methyl-1-butene	00563-46-2	6.38	0.50	3.184	
c-2-Butene	00590-18-1	14.26	0.28	4.022	
2-Methylhexane	00591-76-4	1.09	0.28	0.303	
2,3-Dimethylpentane	00565-59-3	1.25	0.26	0.322	
t-2-Pentene	00646-04-8	10.47	0.24	2.500	
n-Octane	00111-65-9	0.80	0.15	0.122	
n-Pentane	00109-66-0	1.21	0.04	0.054	
Cyclopentene	00142-29-0	6.69	0.04	0.282	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.02	0.245	
		Total	155.3	519.8	3.347
No MIR available, use weighted average of 3.3471					

Vehicle 221b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7562

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	405.47	436.652	
Ethanol	00064-17-5	1.45	401.87	582.293	
2-Methylbutane (Isopentane)	00078-78-4	1.35	204.81	277.497	
Toluene	00108-88-3	3.93	144.31	566.423	
n-Hexane	00110-54-3	1.13	94.53	107.256	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	58.08	81.188	
n-Pentane	00109-66-0	1.21	46.82	56.882	
2-Methyl-2-butene	00513-35-9	14.20	46.22	656.138	
Benzene	00071-43-2	0.69	42.13	29.250	
t-2-Pentene	00646-04-8	10.47	41.61	435.802	
3-Methylpentane	00096-14-0	1.69	39.23	66.329	
Cyclohexane	00110-82-7	1.14	36.84	41.905	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	27.82	33.355	
2,3-Dimethylbutane	00079-29-8	0.90	26.04	23.406	
Methylcyclopentane	00096-37-7	2.05	25.48	52.221	
2-Methyl-1-butene	00563-46-2	6.38	24.07	153.548	
c-2-Pentene	00627-20-3	10.28	21.57	221.725	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	16.40	127.185	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	14.90	174.354	
c-2-Butene	00590-18-1	14.26	11.51	164.182	
2-Methylhexane	00591-76-4	1.09	11.04	11.986	
2,4-Dimethylpentane	00108-08-7	1.46	10.89	15.891	
t-2-Hexene	04050-45-7	8.55	10.44	89.227	
2,3,4-Trimethylpentane	00565-75-3	0.95	9.90	9.391	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	9.76	31.155	
n-Heptane	00142-82-5	0.97	9.54	9.218	
2,3-Dimethylpentane	00565-59-3	1.25	8.41	10.501	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	8.32	44.086	
Methylcyclohexane	00108-87-2	1.56	7.80	12.139	
3-Methyl-t-2-pentene	00616-12-6	11.66	7.57	88.256	
Cyclopentene	00142-29-0	6.69	7.56	50.570	
2,2-DiMeHexane	00590-73-8	0.94	6.78	6.384	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	6.75	53.635	
3-Methyl-c-2-pentene	00922-62-3	12.52	6.24	78.115	
2-Methyl-2-pentene	00625-27-4	11.03	5.88	64.848	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	5.78	38.174	
1-Methylcyclopentene	00693-89-0	12.45	5.72	71.292	
2,4-Dimethylhexane	00589-43-5	1.61	5.31	8.522	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	5.12	27.500	
ortho-Xylene	00095-47-6	7.58	4.45	33.722	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	4.12	30.430	
2,2-Dimethylbutane	00075-83-2	1.11	3.60	3.997	
2-Methylpropane	00075-28-5	1.18	3.37	3.965	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	3.29	5.280	

Vehicle 221b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7562 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Octane	00111-65-9	0.80	3.19	2.542	
2,2,5-Trimethylhexane	03522-94-9	1.05	3.19	3.360	
Ethylbenzene	00100-41-4	2.96	3.15	9.335	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	2.88	3.146	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	2.85	16.486	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.57	11.292	
t-1,2-Dimethylcyclopentane	00822-50-4	2.70	2.44	6.572	
2-Methylheptane	00592-27-8	0.97	2.23	2.153	
2,2-Dimethylpentane	00590-35-2	1.04	1.99	2.080	
c-1,3-Dimethylcyclopentane	02532-58-3	2.70	1.90	5.131	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.84	21.657	
3-Methylheptane	00589-81-1	1.12	1.78	2.000	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.57	8.723	
n-Propylbenzene	00103-65-1	1.96	1.55	3.035	
3,3-Dimethylpentane	00562-49-2	1.12	1.45	1.620	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.42	1.586	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.35	1.424	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	1.19	9.299	
3,5-Dimethylheptane	00926-82-9	1.42	1.00	1.426	
Unknown #1		2.70	0.95	2.557	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.89	9.374	
1,3-Butadiene	00106-99-0	12.45	0.89	11.106	
Unknown #16		2.70	0.89	2.400	
n-Decane	00124-18-5	0.59	0.89	0.525	
n-Nonane	00111-84-2	0.68	0.88	0.601	
c-1,3-Dimethylcyclohexane	00638-04-0	2.70	0.87	2.358	
t-3-Heptene	14686-14-7	6.17	0.81	5.009	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.77	9.183	
Propane	00074-98-6	0.46	0.74	0.340	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.70	0.72	1.939	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.65	2.529	
Isopropylbenzene (Cumene)	00098-82-8	2.70	0.63	1.711	
Indan	00496-11-7	3.23	0.59	1.916	
3,3-Dimethylhexane	00563-16-6	1.15	0.51	0.584	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.49	3.481	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.48	4.002	
Unknown #5		2.70	0.47	1.259	
c-2-Heptene	06443-92-1	7.08	0.42	2.981	
4-Methyloctane	02216-34-4	0.85	0.39	0.334	
t-1,4-Dimethylcyclohexane	02207-04-7	2.70	0.36	0.969	
1-Nonene	00124-11-8	2.49	0.31	0.762	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	0.30	1.950	

Vehicle 221b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7562 **continued**					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.25	1.554	
2,4-Dimethylheptane	02213-23-2	1.26	0.25	0.310	
Unknown #8		2.70	0.18	0.492	
Unknown #14		2.70	0.08	0.221	
		Total	1952.6	5269.2	2.699
No MIR available, use weighted average of 2.6986					

Vehicle 221b - Fuel 7 psi E10 - 86°F Static - Test 7571

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	183.65	248.820	
Ethanol	00064-17-5	1.45	85.05	123.234	
n-Butane	00106-97-8	1.08	55.98	60.286	
n-Hexane	00110-54-3	1.13	42.42	48.137	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	36.76	51.389	
n-Pentane	00109-66-0	1.21	29.25	35.538	
3-Methylpentane	00096-14-0	1.69	26.06	44.059	
2-Methyl-2-butene	00513-35-9	14.20	24.79	351.885	
Toluene	00108-88-3	3.93	21.45	84.201	
t-2-Pentene	00646-04-8	10.47	20.72	216.997	
2,3-Dimethylbutane	00079-29-8	0.90	18.25	16.404	
2-Methyl-1-butene	00563-46-2	6.38	14.75	94.109	
Methylcyclopentane	00096-37-7	2.05	12.48	25.573	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	12.26	14.700	
c-2-Pentene	00627-20-3	10.28	11.25	115.647	
Cyclohexane	00110-82-7	1.14	10.96	12.467	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	10.28	120.270	
c-2-Butene	00590-18-1	14.26	8.44	120.327	
Benzene	00071-43-2	0.69	7.98	5.543	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	5.61	44.524	
2,4-Dimethylpentane	00108-08-7	1.46	5.40	7.883	
n-Propylbenzene	00103-65-1	1.96	4.99	9.781	
2-Methylhexane	00591-76-4	1.09	4.63	5.023	
Methylcyclohexane	00108-87-2	1.56	4.49	6.989	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	4.19	13.370	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	4.00	21.181	
2-Methylpropane	00075-28-5	1.18	3.70	4.351	
t-2-Hexene	04050-45-7	8.55	3.61	30.821	
Cyclopentene	00142-29-0	6.69	3.29	22.015	
2,3,4-Trimethylpentane	00565-75-3	0.95	3.09	2.934	
2-Methyl-2-pentene	00625-27-4	11.03	3.06	33.788	
3-Methyl-t-2-pentene	00616-12-6	11.66	3.00	34.957	
n-Heptane	00142-82-5	0.97	2.89	2.787	
2,3-Dimethylpentane	00565-59-3	1.25	2.85	3.560	
3-Methyl-c-2-pentene	00922-62-3	12.52	2.80	35.108	
2,2-Dimethylbutane	00075-83-2	1.11	2.64	2.935	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	2.45	16.187	
1-Methylcyclopentene	00693-89-0	12.45	1.96	24.373	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	1.88	10.848	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	1.84	14.307	
2,2-Dimethylpentane	00590-35-2	1.04	1.56	1.630	
2,4-Dimethylhexane	00589-43-5	1.61	1.51	2.422	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	1.28	2.052	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.11	1.213	

Vehicle 221b - Fuel 7 psi E10 - 86°F Static - Test 7571 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
t-1,2-Dimethylcyclopentane	00822-50-4	3.02	1.02	3.093	
c-1,3-Dimethylcyclopentane	02532-58-3	3.02	0.99	2.984	
n-Octane	00111-65-9	0.80	0.85	0.676	
Unknown #22	.	3.02	0.82	2.476	
3,3-Dimethylpentane	00562-49-2	1.12	0.81	0.902	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	0.71	3.799	
2,2,3-Trimethylbutane	00464-06-2	1.05	0.70	0.734	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.67	0.704	
2-Methylheptane	00592-27-8	0.97	0.52	0.502	
ortho-Xylene	00095-47-6	7.58	0.51	3.902	
3-Methylheptane	00589-81-1	1.12	0.51	0.577	
Propane	00074-98-6	0.46	0.51	0.232	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.43	1.903	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.42	0.468	
c-1,3-Dimethylcyclohexane	00638-04-0	3.02	0.41	1.241	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.41	2.264	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.40	4.174	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.36	1.364	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.28	2.182	
Ethylbenzene	00100-41-4	2.96	0.22	0.642	
t-1,4-Dimethylcyclohexane	02207-04-7	3.02	0.16	0.480	
		Total	722.3	2179.9	3.018
No MIR available, use weighted average of 3.0180					

Vehicle 221b - Fuel 7 psi E10 - 105°F Static - Test 7572					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	300.70	407.411	
Ethanol	00064-17-5	1.45	175.93	254.913	
n-Butane	00106-97-8	1.08	86.54	93.192	
n-Hexane	00110-54-3	1.13	76.52	86.830	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	64.44	90.071	
n-Pentane	00109-66-0	1.21	49.08	59.633	
Toluene	00108-88-3	3.93	48.57	190.638	
3-Methylpentane	00096-14-0	1.69	45.21	76.439	
2-Methyl-2-butene	00513-35-9	14.20	42.39	601.709	
t-2-Pentene	00646-04-8	10.47	35.06	367.186	
2,3-Dimethylbutane	00079-29-8	0.90	31.83	28.603	
2-Methyl-1-butene	00563-46-2	6.38	24.29	154.955	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	23.37	28.018	
Methylcyclopentane	00096-37-7	2.05	22.39	45.898	
Cyclohexane	00110-82-7	1.14	20.15	22.915	
c-2-Pentene	00627-20-3	10.28	19.28	198.187	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	16.25	190.254	
Benzene	00071-43-2	0.69	14.77	10.255	
c-2-Butene	00590-18-1	14.26	13.00	185.313	
2,4-Dimethylpentane	00108-08-7	1.46	9.82	14.329	
2-Methylhexane	00591-76-4	1.09	8.43	9.146	
Methylcyclohexane	00108-87-2	1.56	8.15	12.672	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	7.85	62.371	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	7.20	22.976	
t-2-Hexene	04050-45-7	8.55	6.54	55.875	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	6.52	34.548	
2,3,4-Trimethylpentane	00565-75-3	0.95	5.94	5.635	
2-Methylpropane	00075-28-5	1.18	5.68	6.687	
Cyclopentene	00142-29-0	6.69	5.68	37.998	
n-Heptane	00142-82-5	0.97	5.59	5.397	
2,3-Dimethylpentane	00565-59-3	1.25	5.31	6.624	
3-Methyl-t-2-pentene	00616-12-6	11.66	5.24	61.099	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	5.09	39.451	
2-Methyl-2-pentene	00625-27-4	11.03	4.87	53.696	
3-Methyl-c-2-pentene	00922-62-3	12.52	4.63	57.940	
2,2-Dimethylbutane	00075-83-2	1.11	4.44	4.934	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	4.07	26.881	
1-Methylcyclopentene	00693-89-0	12.45	3.74	46.520	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	3.22	18.583	
2,4-Dimethylhexane	00589-43-5	1.61	3.18	5.103	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	2.91	15.637	
Methane	00074-82-8	0.01	2.70	0.037	
2,2-Dimethylpentane	00590-35-2	1.04	2.58	2.693	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	2.39	3.835	

Vehicle 221b - Fuel 7 psi E10 - 105°F Static - Test 7572 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,2,5-Trimethylhexane	03522-94-9	1.05	1.87	1.969	
t-1,2-Dimethylcyclopentane	00822-50-4	2.99	1.66	4.961	
n-Octane	00111-65-9	0.80	1.55	1.230	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	1.54	11.385	
ortho-Xylene	00095-47-6	7.58	1.41	10.693	
2-Methylheptane	00592-27-8	0.97	1.41	1.359	
c-1,3-Dimethylcyclopentane	02532-58-3	2.99	1.37	4.095	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.31	1.383	
3,3-Dimethylpentane	00562-49-2	1.12	1.28	1.432	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.21	5.325	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.21	1.323	
3-Methylheptane	00589-81-1	1.12	1.04	1.174	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.98	1.101	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.91	10.720	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.86	6.753	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.77	8.107	
n-Propylbenzene	00103-65-1	1.96	0.73	1.427	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.72	4.010	
Ethylbenzene	00100-41-4	2.96	0.72	2.129	
c-1,3-Dimethylcyclohexane	00638-04-0	2.99	0.71	2.137	
Propane	00074-98-6	0.46	0.67	0.307	
3,5-Dimethylheptane	00926-82-9	1.42	0.47	0.665	
n-Nonane	00111-84-2	0.68	0.44	0.302	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.44	1.706	
Unknown #5		2.99	0.39	1.171	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.27	3.231	
t-1,4-Dimethylcyclohexane	02207-04-7	2.99	0.26	0.776	
t-3-Heptene	14686-14-7	6.17	0.24	1.501	
n-Decane	00124-18-5	0.59	0.23	0.133	
3,3-Dimethylhexane	00563-16-6	1.15	0.22	0.250	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	0.14	0.896	
n-Undecane	01120-21-4	0.52	0.13	0.068	
		Total	1268.7	3796.8	2.993

No MIR available, use weighted average of 2.9927

Vehicle 221b - Fuel 7 psi E10 - Dynamic - Test 25783

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	40.59	58.808	
Toluene	00108-88-3	3.93	17.21	67.543	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	10.33	76.277	
n-Hexane	00110-54-3	1.13	6.67	7.565	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	5.32	6.382	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	4.63	24.844	
Benzene	00071-43-2	0.69	4.58	3.177	
1,3,5-Trimethylbenzene	00108-67-8	11.75	4.22	49.624	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	3.77	29.213	
2-Methylbutane (Isopentane)	00078-78-4	1.35	3.54	4.799	
Methylcyclohexane	00108-87-2	1.56	3.12	4.859	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	3.01	13.205	
3-Methylpentane	00096-14-0	1.69	2.99	5.055	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	2.99	4.179	
2-Methylhexane	00591-76-4	1.09	2.92	3.165	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	2.90	9.239	
c-1,3-Dimethylcyclopentane	02532-58-3	3.37	2.88	9.709	
t-1,2-Dimethylcyclopentane	00822-50-4	3.37	2.71	9.150	
Unknown #16		3.37	2.66	8.955	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	2.60	14.407	
Unknown #22	.	3.37	2.48	8.357	
n-Pentane	00109-66-0	1.21	2.32	2.815	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	2.28	16.130	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.99	1.885	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.96	15.603	
n-Nonane	00111-84-2	0.68	1.90	1.300	
t-2-Pentene	00646-04-8	10.47	1.58	16.559	
n-Octane	00111-65-9	0.80	1.53	1.217	
2-Methyl-1-butene	00563-46-2	6.38	1.52	9.671	
2,2-Dimethylpentane	00590-35-2	1.04	1.46	1.521	
3-Methylheptane	00589-81-1	1.12	1.42	1.595	
n-Decane	00124-18-5	0.59	1.40	0.826	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	1.37	7.237	
2-Methyl-2-butene	00513-35-9	14.20	1.36	19.369	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.27	1.382	
n-Heptane	00142-82-5	0.97	1.26	1.216	
1,4-Diethylbenzene	00105-05-5	4.39	1.21	5.321	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.20	1.342	
n-Butane	00106-97-8	1.08	1.14	1.232	
2,2,5-Trimethylhexane	03522-94-9	1.05	1.13	1.193	
2,3-Dimethylpentane	00565-59-3	1.25	1.03	1.285	
n-Undecane	01120-21-4	0.52	1.00	0.524	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	1.00	11.734	
2,4-Dimethylpentane	00108-08-7	1.46	0.92	1.346	

Vehicle 221b - Fuel 7 psi E10 - Dynamic - Test 25783 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.84	1.343	
n-Propylbenzene	00103-65-1	1.96	0.81	1.589	
c-2-Butene	00590-18-1	14.26	0.69	9.881	
c-2-Pentene	00627-20-3	10.28	0.63	6.458	
Ethylbenzene	00100-41-4	2.96	0.60	1.775	
2,3-Dimethylbutane	00079-29-8	0.90	0.52	0.464	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.50	5.980	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.42	4.900	
t-2-Hexene	04050-45-7	8.55	0.27	2.335	
Methane	00074-82-8	0.01	0.25	0.003	
Indan	00496-11-7	3.23	0.23	0.759	
2,4-Dimethylhexane	00589-43-5	1.61	0.17	0.269	
2,2-Dimethylbutane	00075-83-2	1.11	0.16	0.172	
2-Methyl-2-pentene	00625-27-4	11.03	0.15	1.623	
ortho-Xylene	00095-47-6	7.58	0.07	0.520	
		Total	171.6	578.9	3.373
No MIR available, use weighted average of 3.3727					

Vehicle 221b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7579					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	462.69	670.422	
Toluene	00108-88-3	3.93	201.13	789.442	
2-Methylbutane (Isopentane)	00078-78-4	1.35	182.81	247.689	
n-Hexane	00110-54-3	1.13	108.39	122.983	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	61.21	85.555	
n-Butane	00106-97-8	1.08	58.34	62.826	
Benzene	00071-43-2	0.69	49.41	34.308	
2-Methyl-2-butene	00513-35-9	14.20	47.01	667.349	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	44.60	53.484	
3-Methylpentane	00096-14-0	1.69	44.17	74.687	
n-Pentane	00109-66-0	1.21	43.09	52.348	
t-2-Pentene	00646-04-8	10.47	41.06	430.020	
Cyclohexane	00110-82-7	1.14	33.85	38.501	
Methylcyclopentane	00096-37-7	2.05	29.78	61.051	
2,3-Dimethylbutane	00079-29-8	0.90	26.14	23.492	
2-Methyl-1-butene	00563-46-2	6.38	23.36	149.005	
c-2-Pentene	00627-20-3	10.28	21.21	218.100	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	20.26	157.099	
2,3,4-Trimethylpentane	00565-75-3	0.95	19.46	18.463	
Methylcyclohexane	00108-87-2	1.56	16.07	25.002	
2-Methylhexane	00591-76-4	1.09	15.30	16.606	
n-Heptane	00142-82-5	0.97	14.61	14.110	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	14.09	164.892	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	13.58	43.342	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	13.45	72.212	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	13.39	98.893	
2,4-Dimethylpentane	00108-08-7	1.46	13.08	19.095	
t-2-Hexene	04050-45-7	8.55	11.58	99.003	
c-2-Butene	00590-18-1	14.26	10.58	150.824	
2,3-Dimethylpentane	00565-59-3	1.25	9.39	11.720	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	9.20	48.766	
2,4-Dimethylhexane	00589-43-5	1.61	8.64	13.864	
3-Methyl-t-2-pentene	00616-12-6	11.66	8.30	96.729	
n-Octane	00111-65-9	0.80	7.84	6.241	
3-Methyl-c-2-pentene	00922-62-3	12.52	7.80	97.607	
Cyclopentene	00142-29-0	6.69	7.68	51.325	
2,2,5-Trimethylhexane	03522-94-9	1.05	7.03	7.406	
2-Methyl-2-pentene	00625-27-4	11.03	6.84	75.490	
1-Methylcyclopentene	00693-89-0	12.45	6.76	84.235	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	6.53	10.483	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	6.49	51.542	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	6.37	42.086	
ortho-Xylene	00095-47-6	7.58	6.09	46.157	
2,2-DiMeHexane	00590-73-8	0.94	5.99	5.635	

Vehicle 221b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7579 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	5.88	25.857	
1,3,5-Trimethylbenzene	00108-67-8	11.75	5.07	59.652	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	4.96	5.417	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	4.38	24.261	
Ethylbenzene	00100-41-4	2.96	4.29	12.719	
2-Methylheptane	00592-27-8	0.97	4.29	4.149	
2,2-Dimethylbutane	00075-83-2	1.11	3.52	3.913	
t-1,2-Dimethylcyclopentane	00822-50-4	3.03	3.46	10.510	
3-Methylheptane	00589-81-1	1.12	3.44	3.874	
n-Propylbenzene	00103-65-1	1.96	3.19	6.256	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	3.19	18.438	
2,2-Dimethylpentane	00590-35-2	1.04	2.87	2.994	
c-1,3-Dimethylcyclopentane	02532-58-3	3.03	2.77	8.389	
2-Methylpropane	00075-28-5	1.18	2.63	3.097	
Unknown #16		3.03	2.46	7.477	
n-Nonane	00111-84-2	0.68	2.32	1.582	
c-1,3-Dimethylcyclohexane	00638-04-0	3.03	2.11	6.401	
3,3-Dimethylpentane	00562-49-2	1.12	2.05	2.289	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.71	1.806	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	1.52	11.903	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.52	18.133	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	1.41	5.433	
3,5-Dimethylheptane	00926-82-9	1.42	1.38	1.959	
4-Methyloctane	02216-34-4	0.85	1.36	1.156	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.30	1.456	
Unknown #5		3.03	1.17	3.542	
n-Decane	00124-18-5	0.59	1.15	0.682	
t-1,4-Dimethylcyclohexane	02207-04-7	3.03	1.15	3.493	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	1.01	7.124	
Unknown #8		3.03	1.00	3.022	
3,3-Dimethylhexane	00563-16-6	1.15	0.93	1.071	
Unknown #13		3.03	0.92	2.795	
Indan	00496-11-7	3.23	0.90	2.899	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	3.03	0.89	2.697	
3-Methyloctane	02216-33-3	0.88	0.84	0.740	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.82	8.593	
1-Nonene	00124-11-8	2.49	0.77	1.930	
Isopropylbenzene (Cumene)	00098-82-8	3.03	0.74	2.236	
1,1-Dimethylcyclohexane	00590-66-9	1.12	0.72	0.800	
2,4-Dimethylheptane	02213-23-2	1.26	0.70	0.881	
c-2-Heptene	06443-92-1	7.08	0.69	4.903	
1-Methyl-2-Propylbenzene	01074-17-5	5.43	0.66	3.577	

Vehicle 221b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7579 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
3-Methylnonane		3.03	0.64	1.944	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	0.63	4.764	
1,4-Diethylbenzene	00105-05-5	4.39	0.61	2.658	
t-3-Heptene	14686-14-7	6.17	0.59	3.610	
t-2-Nonene	06434-78-2	3.03	0.51	1.538	
Unknown #9		3.03	0.49	1.478	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.46	3.712	
sec-Butylbenzene	00135-98-8	2.29	0.45	1.029	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.41	3.396	
Unknown #3		3.03	0.37	1.130	
c- & t-4-Nonene	02198-23-4	4.42	0.36	1.591	
1-Heptene	00592-76-7	4.29	0.34	1.452	
1,3-Diethylbenzene	00141-93-5	7.08	0.31	2.205	
Propane	00074-98-6	0.46	0.31	0.141	
Isobutylbenzene	00538-93-2	3.03	0.29	0.890	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	0.27	0.227	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	0.23	1.478	
n-Undecane	01120-21-4	0.52	0.19	0.098	
		Total	1860.2	5643.5	3.034
No MIR available, use weighted average of 3.0338					

Vehicle 221b - Fuel 9 psi E0 - 86°F Static - Test 7650					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	460.36	495.765	
2-Methylbutane (Isopentane)	00078-78-4	1.35	319.27	432.580	
Cyclohexane	00110-82-7	1.14	60.88	69.245	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	39.91	55.782	
n-Hexane	00110-54-3	1.13	33.30	37.790	
Toluene	00108-88-3	3.93	30.43	119.456	
n-Pentane	00109-66-0	1.21	27.36	33.236	
3-Methylpentane	00096-14-0	1.69	25.94	43.858	
2,3-Dimethylbutane	00079-29-8	0.90	23.51	21.131	
2-Methyl-2-butene	00513-35-9	14.20	22.33	316.947	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	18.56	22.251	
t-2-Pentene	00646-04-8	10.47	17.69	185.320	
Methylcyclopentane	00096-37-7	2.05	12.61	25.840	
2-Methyl-1-butene	00563-46-2	6.38	12.29	78.397	
c-2-Pentene	00627-20-3	10.28	10.04	103.198	
Benzene	00071-43-2	0.69	8.78	6.097	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	7.86	92.045	
2,4-Dimethylpentane	00108-08-7	1.46	6.98	10.185	
c-2-Butene	00590-18-1	14.26	6.30	89.898	
2,3,4-Trimethylpentane	00565-75-3	0.95	5.19	4.929	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	4.90	38.034	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	4.87	26.155	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	4.83	21.244	
2,2-Dimethylbutane	00075-83-2	1.11	4.65	5.170	
2-Methylhexane	00591-76-4	1.09	4.48	4.867	
2,3-Dimethylpentane	00565-59-3	1.25	4.20	5.242	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	4.16	13.278	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	3.86	20.462	
t-2-Hexene	04050-45-7	8.55	3.77	32.188	
Ethanol	00064-17-5	1.45	3.71	5.373	
3-Methyl-t-2-pentene	00616-12-6	11.66	3.67	42.836	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	3.56	28.237	
Cyclopentene	00142-29-0	6.69	3.29	22.007	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	3.00	22.154	
3-Methyl-c-2-pentene	00922-62-3	12.52	2.99	37.449	
2-Methyl-2-pentene	00625-27-4	11.03	2.90	31.999	
2-Methylpropane	00075-28-5	1.18	2.63	3.096	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	2.58	17.033	
1-Methylcyclopentene	00693-89-0	12.45	2.29	28.479	
2,4-Dimethylhexane	00589-43-5	1.61	2.17	3.477	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	2.07	3.322	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	1.97	11.388	
2,2,5-Trimethylhexane	03522-94-9	1.05	1.93	2.034	
n-Heptane	00142-82-5	0.97	1.82	1.761	

Vehicle 221b - Fuel 9 psi E0 - 86°F Static - Test 7650 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.74	9.663	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.61	1.755	
n-Propylbenzene	00103-65-1	1.96	1.35	2.645	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.32	15.795	
ortho-Xylene	00095-47-6	7.58	1.27	9.618	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.19	14.047	
2,2-Dimethylpentane	00590-35-2	1.04	1.19	1.241	
t-1,2-Dimethylcyclopentane	00822-50-4	2.20	1.17	2.582	
c-1,3-Dimethylcyclopentane	02532-58-3	2.20	0.93	2.059	
Ethylbenzene	00100-41-4	2.96	0.80	2.363	
Methylcyclohexane	00108-87-2	1.56	0.78	1.217	
2,2,3-Trimethylbutane	00464-06-2	1.05	0.69	0.728	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.66	5.311	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.61	3.874	
n-Octane	00111-65-9	0.80	0.61	0.484	
3,3-Dimethylpentane	00562-49-2	1.12	0.57	0.638	
2-Methylheptane	00592-27-8	0.97	0.54	0.523	
3-Methylheptane	00589-81-1	1.12	0.49	0.546	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.35	3.665	
Unknown #1		2.20	0.29	0.634	
n-Decane	00124-18-5	0.59	0.16	0.096	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.08	0.087	
		Total	1248.3	2750.8	2.204
No MIR available, use weighted average of 2.2036					

Vehicle 221b - Fuel 9 psi E0 - 105°F Static - Test 7652

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	636.36	685.309	
2-Methylbutane (Isopentane)	00078-78-4	1.35	469.23	635.754	
Cyclohexane	00110-82-7	1.14	100.16	113.921	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	62.96	88.010	
n-Hexane	00110-54-3	1.13	53.73	60.962	
Toluene	00108-88-3	3.93	51.80	203.304	
n-Pentane	00109-66-0	1.21	41.21	50.068	
3-Methylpentane	00096-14-0	1.69	41.07	69.450	
2,3-Dimethylbutane	00079-29-8	0.90	36.44	32.750	
2-Methyl-2-butene	00513-35-9	14.20	33.67	477.972	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	31.65	37.952	
t-2-Pentene	00646-04-8	10.47	26.30	275.421	
Methylcyclopentane	00096-37-7	2.05	20.33	41.665	
2-Methyl-1-butene	00563-46-2	6.38	18.05	115.161	
c-2-Pentene	00627-20-3	10.28	14.23	146.307	
Benzene	00071-43-2	0.69	13.97	9.701	
2,4-Dimethylpentane	00108-08-7	1.46	11.64	16.988	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	10.46	122.473	
2,3,4-Trimethylpentane	00565-75-3	0.95	8.67	8.225	
c-2-Butene	00590-18-1	14.26	7.62	108.727	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	7.07	54.853	
2-Methylhexane	00591-76-4	1.09	6.98	7.574	
2,2-Dimethylbutane	00075-83-2	1.11	6.79	7.541	
2,3-Dimethylpentane	00565-59-3	1.25	6.71	8.375	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	6.41	33.972	
t-2-Hexene	04050-45-7	8.55	5.98	51.126	
3-Methyl-t-2-pentene	00616-12-6	11.66	5.34	62.218	
Ethanol	00064-17-5	1.45	5.20	7.530	
2-Methyl-2-pentene	00625-27-4	11.03	4.72	52.108	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	4.65	36.962	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	4.65	14.842	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	4.64	24.922	
Cyclopentene	00142-29-0	6.69	4.64	31.029	
3-Methyl-c-2-pentene	00922-62-3	12.52	4.35	54.439	
2-Methylpropane	00075-28-5	1.18	4.18	4.921	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	3.77	24.888	
1-Methylcyclopentene	00693-89-0	12.45	3.66	45.560	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	3.42	25.265	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	3.04	4.874	
2,4-Dimethylhexane	00589-43-5	1.61	2.97	4.775	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	2.92	16.865	
2,2,5-Trimethylhexane	03522-94-9	1.05	2.46	2.586	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	2.39	2.605	
n-Heptane	00142-82-5	0.97	2.27	2.189	

Vehicle 221b - Fuel 9 psi E0 - 105°F Static - Test 7652 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Methylcyclohexane	00108-87-2	1.56	2.27	3.525	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.24	9.822	
ortho-Xylene	00095-47-6	7.58	2.18	16.550	
2,2-Dimethylpentane	00590-35-2	1.04	1.89	1.969	
t-1,2-Dimethylcyclopentane	00822-50-4	2.19	1.88	4.117	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.67	19.620	
c-1,3-Dimethylcyclopentane	02532-58-3	2.19	1.55	3.401	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.20	6.668	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.18	1.241	
Ethylbenzene	00100-41-4	2.96	1.17	3.466	
4-Methyl-t-2-pentene	00674-76-0	8.04	1.15	9.273	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.86	5.413	
2-Methylheptane	00592-27-8	0.97	0.84	0.809	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.81	9.717	
3-Methylheptane	00589-81-1	1.12	0.80	0.904	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.71	5.575	
3,3-Dimethylpentane	00562-49-2	1.12	0.69	0.777	
n-Propylbenzene	00103-65-1	1.96	0.67	1.309	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.56	5.836	
Unknown #1		2.19	0.49	1.079	
n-Octane	00111-65-9	0.80	0.40	0.322	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.09	0.097	
		Total	1824.1	3993.6	2.189
No MIR available, use weighted average of 2.1894					

Vehicle 221b - Fuel 9 psi E0 - Dynamic - Test 25790

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Cyclohexane	00110-82-7	1.14	34.45	39.177	
n-Butane	00106-97-8	1.08	32.29	34.777	
2-Methylbutane (Isopentane)	00078-78-4	1.35	30.81	41.741	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	28.39	39.678	
Toluene	00108-88-3	3.93	26.61	104.454	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	15.77	18.914	
2,3-Dimethylbutane	00079-29-8	0.90	15.66	14.071	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	11.73	62.966	
n-Pentane	00109-66-0	1.21	10.89	13.226	
n-Hexane	00110-54-3	1.13	9.50	10.777	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	8.50	37.361	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	6.33	49.088	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	6.09	44.983	
3-Methylpentane	00096-14-0	1.69	5.66	9.578	
Benzene	00071-43-2	0.69	5.02	3.483	
2,3,4-Trimethylpentane	00565-75-3	0.95	4.83	4.583	
2,3-Dimethylpentane	00565-59-3	1.25	4.27	5.335	
Methylcyclopentane	00096-37-7	2.05	3.70	7.591	
2-Methyl-2-butene	00513-35-9	14.20	3.01	42.795	
2-Methyl-1-butene	00563-46-2	6.38	2.95	18.815	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	2.89	33.783	
2-Methylhexane	00591-76-4	1.09	2.88	3.123	
1,3,5-Trimethylbenzene	00108-67-8	11.75	2.65	31.164	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	2.58	14.295	
2,4-Dimethylhexane	00589-43-5	1.61	2.56	4.103	
2,4-Dimethylpentane	00108-08-7	1.46	2.30	3.354	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	2.15	14.180	
t-2-Pentene	00646-04-8	10.47	1.82	19.081	
Ethylbenzene	00100-41-4	2.96	1.78	5.272	
3-Methylheptane	00589-81-1	1.12	1.75	1.966	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.70	5.414	
2-Methylheptane	00592-27-8	0.97	1.66	1.607	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.53	18.249	
n-Propylbenzene	00103-65-1	1.96	1.52	2.978	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	1.47	2.354	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	1.28	8.041	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	1.22	1.337	
ortho-Xylene	00095-47-6	7.58	1.15	8.681	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.10	8.700	
n-Heptane	00142-82-5	0.97	0.99	0.954	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.93	11.589	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.89	0.942	
2-Methyl-2-pentene	00625-27-4	11.03	0.84	9.286	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.72	8.341	

Vehicle 221b - Fuel 9 psi E0 - Dynamic - Test 25790 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,2-Dimethylpentane	00590-35-2	1.04	0.71	0.739	
2,2-Dimethylbutane	00075-83-2	1.11	0.69	0.765	
t-2-Hexene	04050-45-7	8.55	0.67	5.756	
2,2-DiMeHexane	00590-73-8	0.94	0.65	0.611	
1,3-Butadiene	00106-99-0	12.45	0.59	7.321	
1-Methylcyclopentene	00693-89-0	12.45	0.43	5.374	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.42	4.417	
Cyclopentene	00142-29-0	6.69	0.34	2.254	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.20	0.220	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.19	1.003	
c-2-Pentene	00627-20-3	10.28	0.11	1.115	
		Total	311.8	851.8	2.732

Vehicle 221b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7667					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	391.77	421.903	
2-Methylbutane (Isopentane)	00078-78-4	1.35	291.96	395.579	
Toluene	00108-88-3	3.93	149.99	588.714	
Cyclohexane	00110-82-7	1.14	111.22	126.496	
n-Hexane	00110-54-3	1.13	66.44	75.387	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	53.20	74.363	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	41.21	49.420	
3-Methylpentane	00096-14-0	1.69	36.07	60.983	
Benzene	00071-43-2	0.69	34.30	23.814	
n-Pentane	00109-66-0	1.21	33.28	40.434	
2-Methyl-2-butene	00513-35-9	14.20	32.16	456.446	
t-2-Pentene	00646-04-8	10.47	28.33	296.746	
2,3-Dimethylbutane	00079-29-8	0.90	26.75	24.037	
Methylcyclopentane	00096-37-7	2.05	22.50	46.117	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	22.02	170.745	
2,3,4-Trimethylpentane	00565-75-3	0.95	15.69	14.886	
2-Methyl-1-butene	00563-46-2	6.38	14.69	93.703	
c-2-Pentene	00627-20-3	10.28	13.83	142.219	
2,4-Dimethylpentane	00108-08-7	1.46	11.90	17.361	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	9.74	52.287	
2-Methylhexane	00591-76-4	1.09	9.69	10.513	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	9.48	110.908	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	9.14	67.516	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	8.54	27.262	
2,3,5-Trimethylhexane	01069-53-0	1.12	8.51	9.529	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	8.43	44.676	
2,3-Dimethylpentane	00565-59-3	1.25	8.42	10.515	
c-2-Butene	00590-18-1	14.26	8.36	119.250	
t-2-Hexene	04050-45-7	8.55	8.22	70.309	
3-Methyl-t-2-pentene	00616-12-6	11.66	7.14	83.278	
2,4-Dimethylhexane	00589-43-5	1.61	7.13	11.455	
Ethylbenzene	00100-41-4	2.96	6.65	19.712	
1-Methylcyclopentene	00693-89-0	12.45	5.80	72.203	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	5.74	36.175	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	5.53	8.883	
3-Methyl-c-2-pentene	00922-62-3	12.52	5.49	68.775	
2,2,5-Trimethylhexane	03522-94-9	1.05	5.33	5.609	
Cyclopentene	00142-29-0	6.69	5.23	34.958	
2-Methylpropane	00075-28-5	1.18	5.09	5.985	
2-Methyl-2-pentene	00625-27-4	11.03	5.05	55.729	
n-Heptane	00142-82-5	0.97	5.01	4.837	
ortho-Xylene	00095-47-6	7.58	4.99	37.775	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	4.88	32.261	
4-Methyl-t-2-pentene	00674-76-0	8.04	4.19	33.668	

Vehicle 221b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7667 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,2-Dimethylbutane	00075-83-2	1.11	4.18	4.642	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	3.96	4.324	
Methylcyclohexane	00108-87-2	1.56	3.59	5.580	
1,3,5-Trimethylbenzene	00108-67-8	11.75	3.43	40.267	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	3.23	25.667	
Ethanol	00064-17-5	1.45	2.91	4.215	
Propane	00074-98-6	0.46	2.77	1.265	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	2.42	13.969	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	2.30	12.728	
t-1,2-Dimethylcyclopentane	00822-50-4	2.68	2.12	5.690	
n-Propylbenzene	00103-65-1	1.96	2.07	4.056	
c-2-Heptene	06443-92-1	7.08	1.79	12.655	
2,2-Dimethylpentane	00590-35-2	1.04	1.74	1.814	
c-1,3-Dimethylcyclopentane	02532-58-3	2.68	1.72	4.609	
2-Methylheptane	00592-27-8	0.97	1.70	1.647	
3-Methylheptane	00589-81-1	1.12	1.53	1.716	
Indan	00496-11-7	3.23	1.44	4.665	
n-Octane	00111-65-9	0.80	1.38	1.098	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	1.21	9.514	
Unknown #16		2.68	0.98	2.627	
n-Decane	00124-18-5	0.59	0.93	0.551	
2,2,3-Trimethylbutane	00464-06-2	1.05	0.88	0.929	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.85	10.147	
Unknown #5		2.68	0.84	2.247	
3,3-Dimethylpentane	00562-49-2	1.12	0.81	0.903	
Isopropylbenzene (Cumene)	00098-82-8	2.68	0.81	2.159	
Unknown #1		2.68	0.71	1.896	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.66	2.549	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.62	6.448	
3,5-Dimethylheptane	00926-82-9	1.42	0.53	0.762	
c-1,3-Dimethylcyclohexane	00638-04-0	2.68	0.49	1.302	
1-Nonene	00124-11-8	2.49	0.47	1.166	
2-MeOctane & 2,3-DiMeHeptane	03074-71-3+03221-61-2	0.85	0.30	0.257	
t-3-Heptene	14686-14-7	6.17	0.29	1.805	
Unknown #9		2.68	0.28	0.744	
1,4-Diethylbenzene	00105-05-5	4.39	0.26	1.162	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.22	1.849	
3,3-Dimethylhexane	00563-16-6	1.15	0.20	0.226	
n-Nonane	00111-84-2	0.68	0.14	0.098	
		Total	1625.8	4353.4	2.678
No MIR available, use weighted average of 2.6776					

Vehicle 221b - Fuel 7 psi E0 - 86°F Static - Test 7691

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	353.11	478.423	
n-Butane	00106-97-8	1.08	239.03	257.412	
Cyclohexane	00110-82-7	1.14	69.24	78.747	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	50.17	70.124	
n-Hexane	00110-54-3	1.13	36.39	41.296	
n-Pentane	00109-66-0	1.21	31.28	38.004	
Toluene	00108-88-3	3.93	29.62	116.252	
2,3-Dimethylbutane	00079-29-8	0.90	29.50	26.514	
3-Methylpentane	00096-14-0	1.69	28.09	47.498	
2-Methyl-2-butene	00513-35-9	14.20	25.04	355.396	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	21.13	25.335	
t-2-Pentene	00646-04-8	10.47	19.17	200.764	
Methylcyclopentane	00096-37-7	2.05	13.81	28.309	
2-Methyl-1-butene	00563-46-2	6.38	13.42	85.617	
c-2-Pentene	00627-20-3	10.28	10.68	109.799	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	9.33	68.913	
Benzene	00071-43-2	0.69	8.77	6.091	
2,4-Dimethylpentane	00108-08-7	1.46	7.87	11.484	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	7.55	88.328	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	6.77	52.471	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	6.25	33.583	
c-2-Butene	00590-18-1	14.26	5.84	83.339	
2,2-Dimethylbutane	00075-83-2	1.11	5.77	6.410	
2,3,4-Trimethylpentane	00565-75-3	0.95	5.63	5.341	
2-Methylpropane	00075-28-5	1.18	5.19	6.112	
2-Methylhexane	00591-76-4	1.09	4.79	5.194	
2,3-Dimethylpentane	00565-59-3	1.25	4.64	5.797	
2,4-Dimethylheptane	02213-23-2	1.26	4.19	5.297	
t-2-Hexene	04050-45-7	8.55	4.12	35.227	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	4.09	21.663	
3-Methyl-t-2-pentene	00616-12-6	11.66	4.07	47.420	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	3.64	28.886	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	3.39	10.817	
2-Methyl-2-pentene	00625-27-4	11.03	3.26	35.990	
Cyclopentene	00142-29-0	6.69	3.17	21.193	
3-Methyl-c-2-pentene	00922-62-3	12.52	3.06	38.350	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	2.81	18.539	
2,4-Dimethylhexane	00589-43-5	1.61	2.61	4.194	
1,3,5-Trimethylbenzene	00108-67-8	11.75	2.37	27.849	
1-Methylcyclopentene	00693-89-0	12.45	2.37	29.494	
2,2,5-Trimethylhexane	03522-94-9	1.05	2.29	2.413	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.20	9.687	
3-Methyl-1-butene	00563-45-1	6.85	2.16	14.823	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	2.15	12.430	

Vehicle 221b - Fuel 7 psi E0 - 86°F Static - Test 7691 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
3,3-Dimethylhexane	00563-16-6	1.15	2.07	2.386	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	1.75	2.813	
ortho-Xylene	00095-47-6	7.58	1.60	12.131	
n-Heptane	00142-82-5	0.97	1.57	1.516	
Ethylbenzene	00100-41-4	2.96	1.45	4.299	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.30	7.189	
t-1,2-Dimethylcyclopentane	00822-50-4	2.46	1.15	2.832	
2,2-Dimethylpentane	00590-35-2	1.04	1.08	1.131	
2-Methylheptane	00592-27-8	0.97	1.08	1.040	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.07	12.797	
Propane	00074-98-6	0.46	1.01	0.462	
c-1,3-Dimethylcyclopentane	02532-58-3	2.46	0.95	2.341	
n-Propylbenzene	00103-65-1	1.96	0.88	1.727	
2,2,3-Trimethylbutane	00464-06-2	1.05	0.79	0.837	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.70	0.767	
Methylcyclohexane	00108-87-2	1.56	0.58	0.898	
3,3-Dimethylpentane	00562-49-2	1.12	0.50	0.564	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.45	3.536	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.40	4.224	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.35	2.183	
3-Methylheptane	00589-81-1	1.12	0.33	0.370	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.32	0.361	
n-Octane	00111-65-9	0.80	0.24	0.191	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.17	1.380	
		Total	1121.8	2764.8	2.465

No MIR available, use weighted average of 2.4645

Vehicle 221b - Fuel 7 psi E0 - 105°F Static - Test 7692

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	424.48	575.119	
n-Butane	00106-97-8	1.08	264.00	284.303	
Cyclohexane	00110-82-7	1.14	120.32	136.846	
Toluene	00108-88-3	3.93	69.41	272.440	
Unknown #2		2.61	63.63	166.355	
n-Hexane	00110-54-3	1.13	57.55	65.305	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	47.69	57.184	
3-Methylpentane	00096-14-0	1.69	43.68	73.864	
n-Pentane	00109-66-0	1.21	39.63	48.144	
2,3-Dimethylbutane	00079-29-8	0.90	39.00	35.047	
2-Methyl-2-butene	00513-35-9	14.20	31.47	446.654	
t-2-Pentene	00646-04-8	10.47	24.83	260.030	
Methylcyclopentane	00096-37-7	2.05	22.35	45.814	
2-Methyl-1-butene	00563-46-2	6.38	16.53	105.461	
2,3,4-Trimethylpentane	00565-75-3	0.95	16.31	15.471	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	14.33	76.946	
Benzene	00071-43-2	0.69	14.31	9.935	
2,4-Dimethylpentane	00108-08-7	1.46	13.68	19.967	
c-2-Pentene	00627-20-3	10.28	13.19	135.562	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	10.76	83.472	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	10.04	117.496	
2,3-Dimethylpentane	00565-59-3	1.25	9.39	11.716	
2-Methylhexane	00591-76-4	1.09	9.39	10.185	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	8.53	63.011	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	8.44	26.917	
2,2-Dimethylbutane	00075-83-2	1.11	7.24	8.050	
2,4-Dimethylhexane	00589-43-5	1.61	6.89	11.066	
c-2-Butene	00590-18-1	14.26	6.52	93.031	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	6.46	34.232	
2,2,5-Trimethylhexane	03522-94-9	1.05	6.42	6.757	
t-2-Hexene	04050-45-7	8.55	6.30	53.899	
3-Methyl-t-2-pentene	00616-12-6	11.66	6.10	71.088	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	5.90	25.924	
3-Methyl-c-2-pentene	00922-62-3	12.52	4.96	62.136	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	4.91	7.883	
2-Methylpropane	00075-28-5	1.18	4.79	5.636	
1,3,5-Trimethylbenzene	00108-67-8	11.75	4.70	55.274	
Cyclopentene	00142-29-0	6.69	4.46	29.822	
2-Methyl-2-pentene	00625-27-4	11.03	4.38	48.341	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	4.37	34.694	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	4.17	23.083	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	3.98	26.304	
1-Methylcyclopentene	00693-89-0	12.45	3.98	49.558	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	3.85	4.204	

Vehicle 221b - Fuel 7 psi E0 - 105°F Static - Test 7692 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Heptane	00142-82-5	0.97	3.71	3.583	
ortho-Xylene	00095-47-6	7.58	3.15	23.847	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	2.90	16.778	
1,2,3-Trimethylbenzene	00526-73-8	11.94	2.75	32.824	
3-Methyl-1-butene	00563-45-1	6.85	2.69	18.437	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	2.64	18.691	
Methylcyclohexane	00108-87-2	1.56	2.58	4.017	
Indan	00496-11-7	3.23	2.50	8.071	
1,4-Diethylbenzene	00105-05-5	4.39	2.36	10.359	
n-Propylbenzene	00103-65-1	1.96	2.31	4.534	
t-1,2-Dimethylcyclopentane	00822-50-4	2.61	2.19	5.728	
Unknown #16		2.61	2.03	5.297	
2,2-Dimethylpentane	00590-35-2	1.04	1.98	2.070	
c-1,3-Dimethylcyclopentane	02532-58-3	2.61	1.80	4.702	
Ethylbenzene	00100-41-4	2.96	1.62	4.800	
3-Methylheptane	00589-81-1	1.12	1.52	1.712	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	1.37	10.715	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.34	1.409	
4-Methyl-t-2-pentene	00674-76-0	8.04	1.21	9.694	
2-Methylheptane	00592-27-8	0.97	1.18	1.138	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.06	1.189	
3,5-Dimethylheptane	00926-82-9	1.42	0.97	1.381	
1,3-Diethylbenzene	00141-93-5	7.08	0.94	6.636	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.94	5.895	
1-Methyl-2-Propylbenzene	01074-17-5	5.43	0.90	4.890	
n-Octane	00111-65-9	0.80	0.86	0.688	
1,3-Dimethyl-2-Ethylbenzene	02870-04-4	10.16	0.86	8.744	
3,3-Dimethylpentane	00562-49-2	1.12	0.86	0.962	
Unknown #5		2.61	0.85	2.219	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.80	5.997	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	0.79	5.948	
Isopropylbenzene (Cumene)	00098-82-8	2.61	0.74	1.922	
3-Methyloctane	02216-33-3	0.88	0.73	0.650	
1,3-Dimethyl-4-Ethylbenzene	00874-41-9	7.54	0.67	5.063	
c-2-Heptene	06443-92-1	7.08	0.63	4.425	
1-Nonene	00124-11-8	2.49	0.58	1.440	
2,4-Dimethylheptane	02213-23-2	1.26	0.55	0.702	
1,2,3,5-Tetramethylbenzene	00527-53-7	9.26	0.55	5.073	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.55	2.107	
1-Methyl-4-Isobutylbenzene	05161-04-6	3.82	0.52	2.002	
c-1,3-Dimethylcyclohexane	00638-04-0	2.61	0.50	1.304	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	0.47	3.094	

Vehicle 221b - Fuel 7 psi E0 - 105°F Static - Test 7692 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.44	4.638	
sec-Butylbenzene	00135-98-8	2.29	0.44	1.005	
3-Methylnonane		2.61	0.42	1.101	
Isobutylbenzene	00538-93-2	2.61	0.41	1.070	
Unknown #3		2.61	0.36	0.951	
1,2,4,5-Tetramethylbenzene	00095-93-2	9.26	0.29	2.718	
t-3-Heptene	14686-14-7	6.17	0.28	1.725	
3,3-Dimethylhexane	00563-16-6	1.15	0.27	0.316	
t-2-Nonene	06434-78-2	2.61	0.27	0.706	
3-Ethyl-c-2-Pentene	00816-79-5	9.76	0.27	2.630	
n-Nonane	00111-84-2	0.68	0.24	0.165	
Unknown #8		2.61	0.23	0.610	
n-Undecane	01120-21-4	0.52	0.22	0.115	
Unknown #13		2.61	0.18	0.466	
n-Decane	00124-18-5	0.59	0.18	0.104	
1,1-Dimethylcyclohexane	00590-66-9	1.12	0.15	0.172	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.61	0.13	0.333	
		Total	1558.2	4073.8	2.614
No MIR available, use weighted average of 2.6144					

Vehicle 221b - Fuel 7 psi E0 - Dynamic - Test 25797

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	25.19	98.866	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	21.01	155.169	
2-Methylbutane (Isopentane)	00078-78-4	1.35	20.87	28.280	
n-Butane	00106-97-8	1.08	13.42	14.448	
Cyclohexane	00110-82-7	1.14	12.89	14.657	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	11.57	62.112	
Unknown #2		4.30	10.80	46.422	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	8.41	65.248	
1,3,5-Trimethylbenzene	00108-67-8	11.75	7.39	86.814	
n-Hexane	00110-54-3	1.13	6.01	6.823	
Cyclopentane	00287-92-3	2.24	5.80	12.966	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	5.29	6.344	
Benzene	00071-43-2	0.69	3.83	2.662	
n-Pentane	00109-66-0	1.21	3.24	3.933	
ortho-Xylene	00095-47-6	7.58	2.91	22.066	
Ethylbenzene	00100-41-4	2.96	2.80	8.281	
3-Methylpentane	00096-14-0	1.69	2.65	4.482	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	2.51	13.908	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.51	11.027	
4-Methyl-t-2-pentene	00674-76-0	8.04	2.42	19.467	
n-Propylbenzene	00103-65-1	1.96	2.40	4.694	
2-Methyl-2-butene	00513-35-9	14.20	2.30	32.658	
n-Heptane	00142-82-5	0.97	2.27	2.193	
Methylcyclopentane	00096-37-7	2.05	2.25	4.618	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.83	14.570	
Methylcyclohexane	00108-87-2	1.56	1.73	2.691	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	1.66	10.990	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.57	1.494	
2,4-Dimethylpentane	00108-08-7	1.46	1.42	2.070	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.36	16.265	
2-Methyl-2-pentene	00625-27-4	11.03	1.33	14.635	
3-Methyl-t-2-pentene	00616-12-6	11.66	1.28	14.976	
c-2-Butene	00590-18-1	14.26	1.24	17.637	
2-Methylhexane	00591-76-4	1.09	1.18	1.283	
1-Methylcyclopentene	00693-89-0	12.45	1.07	13.316	
2-Methyl-1-butene	00563-46-2	6.38	1.06	6.784	
t-2-Hexene	04050-45-7	8.55	1.05	9.000	
2,3-Dimethylpentane	00565-59-3	1.25	0.99	1.234	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.99	1.582	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.79	0.880	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.74	7.736	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.60	1.920	
c-2-Pentene	00627-20-3	10.28	0.39	4.017	
t-2-Pentene	00646-04-8	10.47	0.37	3.864	

Vehicle 221b - Fuel 7 psi E0 - Dynamic - Test 25797 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.35	0.368	
2,2-Dimethylbutane	00075-83-2	1.11	0.09	0.099	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.09	0.096	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.08	0.980	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.06	0.335	
		Total	204.1	877.0	4.298
No MIR available, use weighted average of 4.2975					

Vehicle 221b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7716

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	331.35	448.947	
n-Butane	00106-97-8	1.08	196.09	211.173	
Toluene	00108-88-3	3.93	163.70	642.521	
Cyclohexane	00110-82-7	1.14	150.06	170.677	
n-Hexane	00110-54-3	1.13	81.40	92.365	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	67.99	95.037	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	46.75	56.065	
3-Methylpentane	00096-14-0	1.69	44.37	75.032	
n-Pentane	00109-66-0	1.21	40.94	49.745	
2-Methyl-2-butene	00513-35-9	14.20	39.67	563.085	
Benzene	00071-43-2	0.69	38.43	26.682	
t-2-Pentene	00646-04-8	10.47	35.41	370.822	
2,3-Dimethylbutane	00079-29-8	0.90	33.20	29.835	
Methylcyclopentane	00096-37-7	2.05	28.54	58.502	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	19.67	152.524	
2-Methyl-1-butene	00563-46-2	6.38	18.63	118.852	
2,3,4-Trimethylpentane	00565-75-3	0.95	18.39	17.444	
c-2-Pentene	00627-20-3	10.28	16.98	174.558	
2,4-Dimethylpentane	00108-08-7	1.46	14.71	21.471	
2-Methylhexane	00591-76-4	1.09	12.51	13.577	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	11.33	132.658	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	11.07	35.326	
t-2-Hexene	04050-45-7	8.55	10.95	93.620	
2,3-Dimethylpentane	00565-59-3	1.25	10.18	12.710	
2,3,5-Trimethylhexane	01069-53-0	1.12	9.69	10.858	
3-Methyl-t-2-pentene	00616-12-6	11.66	9.57	111.535	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	9.08	48.126	
c-2-Butene	00590-18-1	14.26	8.88	126.689	
Methylcyclohexane	00108-87-2	1.56	8.47	13.172	
2,4-Dimethylhexane	00589-43-5	1.61	8.25	13.252	
1-Methylcyclopentene	00693-89-0	12.45	8.00	99.614	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	7.16	38.440	
3-Methyl-c-2-pentene	00922-62-3	12.52	7.15	89.462	
2,2,5-Trimethylhexane	03522-94-9	1.05	6.83	7.194	
Cyclopentene	00142-29-0	6.69	6.79	45.423	
2-Methyl-2-pentene	00625-27-4	11.03	6.69	73.811	
n-Heptane	00142-82-5	0.97	6.30	6.086	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	6.28	10.088	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	5.94	39.243	
2,2-Dimethylbutane	00075-83-2	1.11	5.57	6.195	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	5.34	23.450	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	5.32	39.329	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	4.55	4.964	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	4.53	35.955	

Vehicle 221b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7716 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
ortho-Xylene	00095-47-6	7.58	4.42	33.470	
Ethanol	00064-17-5	1.45	4.18	6.063	
Ethylbenzene	00100-41-4	2.96	3.64	10.793	
t-1,2-Dimethylcyclopentane	00822-50-4	2.88	3.01	8.650	
2-Methylpropane	00075-28-5	1.18	2.94	3.457	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	2.89	16.719	
c-1,3-Dimethylcyclopentane	02532-58-3	2.88	2.38	6.852	
3-Methylheptane	00589-81-1	1.12	2.31	2.599	
n-Propylbenzene	00103-65-1	1.96	2.00	3.927	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.99	11.025	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.99	23.385	
2,2-Dimethylpentane	00590-35-2	1.04	1.94	2.028	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	1.86	14.558	
Propane	00074-98-6	0.46	1.73	0.792	
n-Octane	00111-65-9	0.80	1.50	1.198	
2-Methylheptane	00592-27-8	0.97	1.49	1.445	
1,2,3-Trimethylbenzene	00526-73-8	11.94	1.31	15.644	
2,2,3-Trimethylbutane	00464-06-2	1.05	1.17	1.236	
Unknown #5		2.88	1.17	3.358	
Unknown #16		2.88	1.03	2.969	
3,3-Dimethylpentane	00562-49-2	1.12	1.03	1.151	
c-1,3-Dimethylcyclohexane	00638-04-0	2.88	0.99	2.849	
Isopropylbenzene (Cumene)	00098-82-8	2.88	0.99	2.837	
1-MeCyHexene & 4-MeHeptane	00591-49-1+00589-53-7	3.86	0.86	3.327	
n-Decane	00124-18-5	0.59	0.82	0.487	
c-2-Heptene	06443-92-1	7.08	0.82	5.775	
Unknown #1		2.88	0.80	2.302	
3-Me-t-3-Hexene & t-2-Heptene	03899-36-3+14686-13-6	8.38	0.78	6.535	
Indan	00496-11-7	3.23	0.77	2.482	
3,5-Dimethylheptane	00926-82-9	1.42	0.75	1.061	
1,4-Diethylbenzene	00105-05-5	4.39	0.70	3.062	
4-Methyloctane	02216-34-4	0.85	0.70	0.592	
3-Methyloctane	02216-33-3	0.88	0.68	0.603	
Styrene	00100-42-5	1.66	0.67	1.111	
Unknown #8		2.88	0.63	1.802	
1-Nonene	00124-11-8	2.49	0.56	1.386	
t-3-Heptene	14686-14-7	6.17	0.54	3.357	
3,3-Dimethylhexane	00563-16-6	1.15	0.49	0.565	
1,3-Dimethyl-2-Ethylbenzene	02870-04-4	10.16	0.48	4.882	
2,4,4-TMe-1- & 2,3-DMe-2-Pentene	00107-39-1+10574-37-5	6.54	0.40	2.620	
n-Nonane	00111-84-2	0.68	0.38	0.260	
2,4-Dimethylheptane	02213-23-2	1.26	0.35	0.447	

continued

Vehicle 221b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7716					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Undecane	01120-21-4	0.52	0.34	0.178	
1-Heptene	00592-76-7	4.29	0.28	1.188	
Unknown #3		2.88	0.22	0.619	
1,1-Dimethylcyclohexane	00590-66-9	1.12	0.17	0.185	
t-1,3 & c-1,4-DiMeCyHexane	02207-03-6+00624-29-3	2.88	0.16	0.462	
t-4-Octene	14850-23-8	4.69	0.12	0.553	
		Total	1644.2	4729.0	2.876
No MIR available, use weighted average of 2.8762					

Vehicle 222b

Test	Fuel	Test No.	Bag THC mg	GC as % of THC	GC VOC mg	Ozone mg	Reactivity	Species Present
86° F	E10 - 10 psi	7552	12.2	212.7	26.0	76.7	2.953	21
Static	E10 - 7 psi	7576	28.2	95.7	27.0	73.7	2.729	29
	E0 - 9 psi	7655	6.4	79.8	5.1	28.5	5.617	10
	E0 - 7 psi	7712	7.0	215.7	15.1	59.6	3.957	24
105° F	E10 - 10 psi	7554	20.6	163.4	33.7	119.6	3.545	32
Static	E10 - 7 psi	7578	28.9	111.3	32.1	134.5	4.189	41
	E0 - 9 psi	7659	11.7	180.8	21.2	100.3	4.734	46
	E0 - 7 psi	7715	14.0	228.9	32.1	165.4	5.146	43
Dynamic	E10 - 10 psi	25779	73.3	30.1	22.1	54.9	2.488	22
	E10 - 7 psi	25785	51.6	66.8	34.5	81.1	2.351	21
	E0 - 9 psi	25791	33.5	145.1	48.6	231.3	4.759	19
	E0 - 7 psi	25808	97.2	72.7	70.6	220.5	3.122	39
DHB	E10 - 10 psi	7558	257.2	70.4	181.0	525.8	2.905	68
Total	E10 - 7 psi	7580	287.6	93.6	269.1	853.3	3.171	66
	E0 - 9 psi	7696	177.2	95.4	169.1	728.2	4.307	64
	E0 - 7 psi	7742	136.4	67.5	92.1	286.4	3.111	47

Vehicle 222b - Fuel 10 psi E10 - 86°F Static - Test 7552					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	3.93	11.33	44.477	
n-Hexane	00110-54-3	1.13	1.49	1.687	
n-Pentane	00109-66-0	1.21	1.32	1.607	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.30	1.557	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	1.25	1.750	
Benzene	00071-43-2	0.69	1.19	0.823	
Cyclohexane	00110-82-7	1.14	1.07	1.216	
2,3,3-Trimethylpentane	00560-21-4	0.95	0.71	0.673	
3-Methylpentane	00096-14-0	1.69	0.70	1.187	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.69	2.217	
2-Methylhexane	00591-76-4	1.09	0.66	0.713	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.60	4.685	
Methylcyclopentane	00096-37-7	2.05	0.59	1.210	
2-Methylbutane (Isopentane)	00078-78-4	1.35	0.57	0.770	
2,3-Dimethylpentane	00565-59-3	1.25	0.48	0.596	
2,4-Dimethylpentane	00108-08-7	1.46	0.42	0.610	
2,3-Dimethylbutane	00079-29-8	0.90	0.41	0.372	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.38	2.425	
2-Methyl-1-butene	00563-46-2	6.38	0.30	1.885	
t-2-Pentene	00646-04-8	10.47	0.27	2.866	
2-Methyl-2-butene	00513-35-9	14.20	0.24	3.340	
		Total	26.0	76.7	2.953

Vehicle 222b - Fuel 10 psi E10 - 105°F Static - Test 7554

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Ethanol	00064-17-5	1.45	4.92	7.125	
n-Butane	00106-97-8	1.08	3.90	4.200	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	2.99	13.133	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	2.83	15.207	
Toluene	00108-88-3	3.93	2.21	8.674	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	1.91	14.814	
n-Hexane	00110-54-3	1.13	1.28	1.449	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.12	1.339	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.10	12.894	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	0.93	1.300	
n-Pentane	00109-66-0	1.21	0.90	1.096	
ortho-Xylene	00095-47-6	7.58	0.83	6.310	
Benzene	00071-43-2	0.69	0.72	0.500	
3-Methylpentane	00096-14-0	1.69	0.69	1.173	
Cyclohexane	00110-82-7	1.14	0.65	0.736	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.60	3.313	
4-Isopropyltoluene (p-Cymene)	00099-87-6	4.41	0.58	2.573	
2,2-DiMeHexane	00590-73-8	0.94	0.55	0.519	
Ethylbenzene	00100-41-4	2.96	0.54	1.595	
2,3,3-Trimethylpentane	00560-21-4	0.95	0.52	0.487	
n-Propylbenzene	00103-65-1	1.96	0.49	0.960	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.44	1.405	
Methylcyclopentane	00096-37-7	2.05	0.43	0.884	
2-Methyl-2-Hexene & c-3-Heptene	02738-19-4+07642-10-6	7.84	0.42	3.265	
t-2-Pentene	00646-04-8	10.47	0.39	4.041	
2-Methyl-2-butene	00513-35-9	14.20	0.35	4.951	
2,3-Dimethylbutane	00079-29-8	0.90	0.34	0.302	
2,4-Dimethylpentane	00108-08-7	1.46	0.31	0.459	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.31	1.930	
c-2-Pentene	00627-20-3	10.28	0.26	2.662	
2-Methylhexane	00591-76-4	1.09	0.20	0.222	
2-Methylbutane (Isopentane)	00078-78-4	1.35	0.03	0.044	
		Total	33.7	119.6	3.545

Vehicle 222b - Fuel 10 psi E10 - Dynamic - Test 25779					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2,4-Dimethylhexane	00589-43-5	1.61	2.97	4.776	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	2.81	3.364	
2,3,5-Trimethylhexane	01069-53-0	1.12	2.16	2.419	
c-2-Pentene	00627-20-3	10.28	2.00	20.515	
2,2,5-Trimethylhexane	03522-94-9	1.05	1.70	1.792	
2,3-Dimethylbutane	00079-29-8	0.90	1.55	1.394	
2-Methylbutane (Isopentane)	00078-78-4	1.35	1.52	2.055	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	1.13	1.816	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.92	0.871	
n-Pentane	00109-66-0	1.21	0.65	0.786	
2-Methylhexane	00591-76-4	1.09	0.62	0.676	
Ethanol	00064-17-5	1.45	0.56	0.816	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.56	1.782	
Benzene	00071-43-2	0.69	0.55	0.384	
ortho-Xylene	00095-47-6	7.58	0.44	3.299	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	0.37	0.512	
t-2-Pentene	00646-04-8	10.47	0.35	3.635	
2,3-Dimethylpentane	00565-59-3	1.25	0.34	0.429	
2-Methyl-1-butene	00563-46-2	6.38	0.33	2.075	
Toluene	00108-88-3	3.93	0.24	0.929	
3-Methylpentane	00096-14-0	1.69	0.22	0.364	
Methylcyclopentane	00096-37-7	2.05	0.08	0.173	
		Total	22.1	54.9	2.488

Vehicle 222b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7558

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	40.78	55.250	
Ethanol	00064-17-5	1.45	23.27	33.720	
n-Butane	00106-97-8	1.08	21.95	23.642	
Toluene	00108-88-3	3.93	11.56	45.359	
n-Pentane	00109-66-0	1.21	5.85	7.110	
n-Hexane	00110-54-3	1.13	5.15	5.844	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	3.39	39.620	
Cyclohexane	00110-82-7	1.14	3.32	3.772	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	3.28	3.929	
Benzene	00071-43-2	0.69	3.25	2.257	
2,2-DiMeHexane	00590-73-8	0.94	3.21	3.019	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	3.13	4.377	
t-2-Pentene	00646-04-8	10.47	2.77	29.061	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	2.70	19.972	
2-Methyl-2-butene	00513-35-9	14.20	2.54	36.085	
3-Methylpentane	00096-14-0	1.69	2.36	3.987	
2-Methyl-1-butene	00563-46-2	6.38	2.32	14.800	
1-Butyne	00107-00-6	6.05	2.25	13.628	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	2.20	17.064	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	1.78	9.562	
Methylcyclopentane	00096-37-7	2.05	1.74	3.560	
2,3-Dimethylbutane	00079-29-8	0.90	1.63	1.467	
c-2-Pentene	00627-20-3	10.28	1.56	16.016	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.29	15.193	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.29	1.226	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.24	3.948	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.17	6.503	
Methylcyclohexane	00108-87-2	1.56	1.17	1.812	
2,4-Dimethylpentane	00108-08-7	1.46	1.15	1.680	
2,3-Dimethylpentane	00565-59-3	1.25	1.11	1.384	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.01	8.015	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.95	4.161	
2-Methylhexane	00591-76-4	1.09	0.93	1.011	
c-2-Butene	00590-18-1	14.26	0.90	12.800	
n-Heptane	00142-82-5	0.97	0.90	0.865	
n-Decane	00124-18-5	0.59	0.87	0.514	
ortho-Xylene	00095-47-6	7.58	0.82	6.192	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.77	0.865	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.77	0.808	
2,4-Dimethylhexane	00589-43-5	1.61	0.75	1.208	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.75	9.327	
t-2-Hexene	04050-45-7	8.55	0.70	6.011	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.64	0.702	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.63	3.364	

Vehicle 222b - Fuel 10 psi E10 - 3 Day Diurnal - Test 7558 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1,3-Butadiene	00106-99-0	12.45	0.58	7.233	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.57	0.922	
Indan	00496-11-7	3.23	0.56	1.819	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.55	6.363	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.53	3.501	
n-Octane	00111-65-9	0.80	0.51	0.404	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.50	5.973	
n-Propylbenzene	00103-65-1	1.96	0.50	0.977	
2-Methylheptane	00592-27-8	0.97	0.47	0.459	
Ethylbenzene	00100-41-4	2.96	0.45	1.330	
1,4-Dimethyl-2-Ethylbenzene	01758-88-9	7.54	0.41	3.126	
2,2-Dimethylbutane	00075-83-2	1.11	0.38	0.424	
2-Methyl-2-pentene	00625-27-4	11.03	0.37	4.110	
c-1,3-Dimethylcyclopentane	02532-58-3	2.90	0.37	1.082	
2,2-Dimethylpentane	00590-35-2	1.04	0.36	0.374	
3,3-Dimethylpentane	00562-49-2	1.12	0.33	0.366	
Cyclopentene	00142-29-0	6.69	0.32	2.143	
t-1,2-Dimethylcyclopentane	00822-50-4	2.90	0.26	0.760	
3-Methylheptane	00589-81-1	1.12	0.24	0.270	
2,2,3-Trimethylbutane	00464-06-2	1.05	0.21	0.226	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.21	1.484	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.17	1.392	
1-Dodecene	00112-41-4	1.56	0.17	0.265	
n-Undecane	01120-21-4	0.52	0.17	0.087	
		Total	181.0	525.8	2.905
No MIR available, use weighted average of 2.9048					

Vehicle 222b - Fuel 7 psi E10 - 86°F Static - Test 7576

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	9.028	12.231	
n-Butane	00106-97-8	1.08	4.627	4.983	
Ethanol	00064-17-5	1.45	2.319	3.360	
Unknown #2		2.73	1.701	4.641	
3-Methylnonane	05911-04-6	0.66	1.336	0.876	
n-Pentane	00109-66-0	1.21	1.297	1.576	
Toluene	00108-88-3	3.93	0.916	3.596	
2-Methyl-2-butene	00513-35-9	14.20	0.758	10.755	
2-Methyl-1-butene	00563-46-2	6.38	0.691	4.410	
t-2-Pentene	00646-04-8	10.47	0.636	6.661	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.464	5.431	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	0.448	3.477	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.408	4.797	
ortho-Xylene	00095-47-6	7.58	0.281	2.125	
2,3-Dimethylpentane	00565-59-3	1.25	0.274	0.342	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.268	1.485	
2,4-Dimethylpentane	00108-08-7	1.46	0.230	0.336	
2-Methylhexane	00591-76-4	1.09	0.225	0.244	
2,2-Dimethylbutane	00075-83-2	1.11	0.204	0.226	
Methylcyclopentane	00096-37-7	2.05	0.193	0.396	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.159	0.507	
Benzene	00071-43-2	0.69	0.116	0.080	
n-Hexane	00110-54-3	1.13	0.104	0.118	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	0.094	0.112	
c-2-Pentene	00627-20-3	10.28	0.072	0.739	
n-Undecane	01120-21-4	0.52	0.071	0.037	
Cyclohexane	00110-82-7	1.14	0.054	0.061	
Ethylbenzene	00100-41-4	2.96	0.026	0.078	
3-Methylpentane	00096-14-0	1.69	0.005	0.009	
		Total	27.0	73.7	2.729

No MIR available, use weighted average of 2.7288

Vehicle 222b - Fuel 7 psi E10 - 105°F Static - Test 7578					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	7.67	10.390	
Ethanol	00064-17-5	1.45	4.52	6.543	
n-Butane	00106-97-8	1.08	2.20	2.375	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	1.75	12.892	
n-Pentane	00109-66-0	1.21	1.63	1.981	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	1.48	17.289	
Toluene	00108-88-3	3.93	1.24	4.862	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.03	12.159	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.01	4.442	
t-2-Pentene	00646-04-8	10.47	0.94	9.838	
2-Methyl-2-butene	00513-35-9	14.20	0.92	13.031	
2-Methyl-1-butene	00563-46-2	6.38	0.82	5.243	
1-Butyne	00107-00-6	6.05	0.69	4.202	
Unknown #22	.	4.19	0.61	2.557	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.59	7.017	
c-2-Butene	00590-18-1	14.26	0.53	7.609	
n-Hexane	00110-54-3	1.13	0.45	0.505	
c-2-Pentene	00627-20-3	10.28	0.39	4.061	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.39	0.433	
2,2-DiMeHexane	00590-73-8	0.94	0.38	0.354	
n-Undecane	01120-21-4	0.52	0.36	0.190	
n-Propylbenzene	00103-65-1	1.96	0.33	0.652	
Methylcyclohexane	00108-87-2	1.56	0.23	0.354	
ortho-Xylene	00095-47-6	7.58	0.20	1.538	
1,2-Dimethyl-4-Ethylbenzene	00934-80-5	7.54	0.19	1.469	
2,2-Dimethylbutane	00075-83-2	1.11	0.19	0.206	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.16	0.265	
2,3-Dimethylbutane	00079-29-8	0.90	0.15	0.138	
Methylcyclopentane	00096-37-7	2.05	0.14	0.297	
n-Heptane	00142-82-5	0.97	0.14	0.140	
Benzene	00071-43-2	0.69	0.14	0.098	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	0.14	0.193	
Ethylbenzene	00100-41-4	2.96	0.13	0.392	
Cyclohexane	00110-82-7	1.14	0.10	0.118	
3-Methylpentane	00096-14-0	1.69	0.07	0.116	
2,3-Dimethylpentane	00565-59-3	1.25	0.07	0.086	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	0.04	0.305	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.04	0.036	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	0.03	0.158	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	0.01	0.006	
2,4-Dimethylpentane	00108-08-7	1.46	0.01	0.008	
		Total	32.1	134.5	4.189
No MIR available, use weighted average of 4.1888					

Vehicle 222b - Fuel 7 psi E10 - Dynamic - Test 25785

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Propylbenzene	00103-65-1	1.96	10.83	21.219	
Ethanol	00064-17-5	1.45	5.29	7.670	
Unknown #22	.	2.35	2.68	6.291	
Toluene	00108-88-3	3.93	2.66	10.434	
2,3,5-Trimethylhexane	01069-53-0	1.12	2.26	2.532	
n-Decane	00124-18-5	0.59	1.42	0.839	
n-Octane	00111-65-9	0.80	1.15	0.919	
2-Methylheptane	00592-27-8	0.97	1.09	1.053	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	1.05	5.803	
Indan	00496-11-7	3.23	0.96	3.105	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	0.93	4.984	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.85	0.928	
n-Heptane	00142-82-5	0.97	0.77	0.748	
Benzene	00071-43-2	0.69	0.69	0.478	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.64	7.554	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	0.60	4.395	
Ethylbenzene	00100-41-4	2.96	0.31	0.916	
ortho-Xylene	00095-47-6	7.58	0.14	1.038	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.13	0.137	
2,3-Dimethylbutane	00079-29-8	0.90	0.02	0.019	
2-Methylhexane	00591-76-4	1.09	0.02	0.023	
		Total	34.5	81.1	2.351
No MIR available, use weighted average of 2.3514					

Vehicle 222b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7580

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	92.55	125.393	
Ethanol	00064-17-5	1.45	37.91	54.925	
n-Pentane	00109-66-0	1.21	21.15	25.692	
2-Methyl-2-butene	00513-35-9	14.20	10.63	150.891	
t-2-Pentene	00646-04-8	10.47	10.13	106.146	
Toluene	00108-88-3	3.93	9.02	35.392	
n-Butane	00106-97-8	1.08	8.38	9.026	
2-Methyl-1-butene	00563-46-2	6.38	7.59	48.406	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	5.40	63.239	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	5.40	7.545	
n-Hexane	00110-54-3	1.13	5.15	5.840	
c-2-Pentene	00627-20-3	10.28	5.02	51.574	
Benzene	00071-43-2	0.69	3.58	2.484	
2,2-DiMeHexane	00590-73-8	0.94	3.53	3.322	
2,3-Dimethylbutane	00079-29-8	0.90	3.29	2.954	
Methylcyclopentane	00096-37-7	2.05	2.78	5.694	
3-Methylpentane	00096-14-0	1.69	2.68	4.528	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	2.45	18.079	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	2.29	2.748	
Cyclohexane	00110-82-7	1.14	1.73	1.972	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	1.39	10.766	
3-Methyl-c-2-pentene	00922-62-3	12.52	1.28	16.079	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.26	1.413	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.14	9.033	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	1.10	3.503	
2-Methylhexane	00591-76-4	1.09	1.08	1.174	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.01	0.957	
2,4-Dimethylpentane	00108-08-7	1.46	0.99	1.447	
Methylcyclohexane	00108-87-2	1.56	0.94	1.470	
c-2-Butene	00590-18-1	14.26	0.93	13.274	
2,2-Dimethylbutane	00075-83-2	1.11	0.90	0.998	
2-Methylheptane	00592-27-8	0.97	0.86	0.834	
Cyclopentene	00142-29-0	6.69	0.86	5.733	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	0.81	4.328	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	0.80	4.634	
n-Heptane	00142-82-5	0.97	0.75	0.725	
2,2,3-Trimethylbutane	00464-06-2	1.05	0.75	0.786	
t-2-Hexene	04050-45-7	8.55	0.74	6.294	
n-Decane	00124-18-5	0.59	0.72	0.425	
2,3-Dimethylpentane	00565-59-3	1.25	0.69	0.858	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.65	4.312	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.60	3.182	
c-1,3-Dimethylcyclopentane	02532-58-3	3.17	0.60	1.904	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.57	6.636	

Vehicle 222b - Fuel 7 psi E10 - 3 Day Diurnal - Test 7580 continued

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methyl-2-pentene	00625-27-4	11.03	0.56	6.222	
Ethylbenzene	00100-41-4	2.96	0.52	1.552	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.50	0.551	
n-Octane	00111-65-9	0.80	0.50	0.397	
2,4-Dimethylhexane	00589-43-5	1.61	0.48	0.776	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.40	0.416	
3,3-Dimethylpentane	00562-49-2	1.12	0.38	0.429	
t-1,2-Dimethylcyclopentane	00822-50-4	3.17	0.38	1.198	
1c-2t-3-TriMeCyPentane	15890-40-1	3.17	0.35	1.101	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.34	2.771	
n-Propylbenzene	00103-65-1	1.96	0.34	0.658	
3-Methylheptane	00589-81-1	1.12	0.33	0.366	
ortho-Xylene	00095-47-6	7.58	0.27	2.025	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.25	0.401	
Indan	00496-11-7	3.23	0.24	0.792	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	0.24	1.042	
c-1,3-Dimethylcyclohexane	00638-04-0	3.17	0.20	0.642	
2-Methyl-1,3-butadiene	00078-79-5	10.48	0.20	2.083	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.17	0.953	
n-Nonane	00111-84-2	0.68	0.14	0.094	
1-Methyl-3-Propylbenzene	01074-43-7	7.08	0.13	0.886	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.11	1.344	
		Total	269.1	853.3	3.171
No MIR available, use weighted average of 3.1711					

Vehicle 222b - Fuel 9 psi E0 - 86°F Static - Test 7655					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Toluene	00108-88-3	1.46	0.92	1.336	
2-Methyl-2-butene	00513-35-9	14.20	0.69	9.865	
t-2-Pentene	00646-04-8	10.47	0.67	6.987	
2,2-Dimethylbutane	00075-83-2	1.11	0.62	0.689	
c-2-Pentene	00627-20-3	10.28	0.61	6.288	
n-Pentane	00109-66-0	1.21	0.60	0.729	
n-Heptane	00142-82-5	0.97	0.56	0.541	
Cyclopentene	00142-29-0	6.69	0.29	1.914	
2-Methylbutane (Isopentane)	00078-78-4	1.35	0.10	0.132	
n-Hexane	00110-54-3	1.13	0.02	0.025	
		Total	5.1	28.5	5.617

Vehicle 222b - Fuel 9 psi E0 - 105°F Static - Test 7659

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	1.54	2.081	
Toluene	00108-88-3	3.93	1.41	5.543	
c-2-Butene	00590-18-1	14.26	1.13	16.161	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.11	4.861	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.06	12.518	
2,3-Dimethylbutane	00079-29-8	0.90	0.95	0.853	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.87	0.822	
Ethylbenzene	00100-41-4	2.96	0.84	2.475	
n-Pentane	00109-66-0	1.21	0.80	0.967	
ortho-Xylene	00095-47-6	7.58	0.60	4.559	
2-Methyl-2-butene	00513-35-9	14.20	0.60	8.542	
2,4,4-Trimethyl-2-Pentene	00107-40-4	6.30	0.54	3.406	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.53	1.698	
n-Heptane	00142-82-5	0.97	0.53	0.513	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.53	6.286	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.52	2.885	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	0.51	2.732	
2,3-Dimethylpentane	00565-59-3	1.25	0.46	0.578	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	0.43	3.190	
2,4-Dimethylpentane	00108-08-7	1.46	0.42	0.613	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	0.40	0.481	
Methylcyclohexane	00108-87-2	1.56	0.40	0.619	
t-2-Pentene	00646-04-8	10.47	0.38	3.995	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.38	0.424	
2,4-Dimethylhexane	00589-43-5	1.61	0.34	0.542	
2-Methylhexane	00591-76-4	1.09	0.32	0.352	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	0.31	0.440	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.30	0.325	
t-2-Hexene	04050-45-7	8.55	0.30	2.540	
n-Propylbenzene	00103-65-1	1.96	0.29	0.566	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	0.26	2.027	
n-Butane	00106-97-8	1.08	0.26	0.276	
2-Methyl-1-butene	00563-46-2	6.38	0.25	1.611	
3-Methylpentane	00096-14-0	1.69	0.24	0.406	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.24	0.383	
2,2-Dimethylbutane	00075-83-2	1.11	0.23	0.251	
Cyclopentene	00142-29-0	6.69	0.21	1.396	
Cyclohexane	00110-82-7	1.14	0.20	0.231	
c-2-Pentene	00627-20-3	10.28	0.18	1.878	
Benzene	00071-43-2	0.69	0.14	0.095	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.12	0.131	
n-Hexane	00110-54-3	1.13	0.06	0.073	
		Total	21.2	100.3	4.734

Vehicle 222b - Fuel 9 psi E0 - Dynamic - Test 25791					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	14.78	109.195	
3-Methylnonane	05911-04-6	0.66	7.99	5.238	
1,3,5-Trimethylbenzene	00108-67-8	11.75	4.20	49.413	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	3.15	3.778	
Toluene	00108-88-3	3.93	2.95	11.569	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	2.35	3.766	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.79	14.205	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	1.76	13.636	
2,3,5-Trimethylhexane	01069-53-0	1.12	1.70	1.906	
n-Propylbenzene	00103-65-1	1.96	1.62	3.182	
t-1,4-Dimethylcyclohexane	02207-04-7	4.76	1.35	6.439	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.22	1.161	
n-Undecane	01120-21-4	0.52	0.89	0.467	
n-Octane	00111-65-9	0.80	0.74	0.592	
2,2-DiMeHexane	00590-73-8	0.94	0.63	0.592	
t-3-Heptene	14686-14-7	6.17	0.51	3.175	
Ethylbenzene	00100-41-4	2.96	0.39	1.165	
2-Methylhexane	00591-76-4	1.09	0.37	0.396	
ortho-Xylene	00095-47-6	7.58	0.18	1.389	
		Total	48.6	231.3	4.759
No MIR available, use weighted average of 4.7594					

Vehicle 222b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7696

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-Methylbutane (Isopentane)	00078-78-4	1.35	29.66	40.180	
1,3-Butadiene	00106-99-0	12.45	17.21	214.335	
Toluene	00108-88-3	3.93	12.92	50.712	
Ethanol	00064-17-5	1.45	12.91	18.706	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	7.64	10.680	
Cyclohexane	00110-82-7	1.14	6.43	7.310	
n-Hexane	00110-54-3	1.13	5.51	6.253	
n-Pentane	00109-66-0	1.21	5.34	6.491	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	4.71	34.801	
3-Methylpentane	00096-14-0	1.69	4.18	7.076	
Methylcyclohexane	00108-87-2	1.56	4.04	6.278	
2,3-Dimethylbutane	00079-29-8	0.90	3.62	3.250	
2-Methyl-1-butene	00563-46-2	6.38	3.40	21.671	
t-2-Pentene	00646-04-8	10.47	3.33	34.860	
2-Methyl-2-butene	00513-35-9	14.20	3.29	46.756	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	3.28	3.928	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	3.02	23.403	
1-Butyne	00107-00-6	6.05	2.86	17.332	
Benzene	00071-43-2	0.69	2.53	1.757	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	2.27	12.196	
Methylcyclopentane	00096-37-7	2.05	1.97	4.035	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.90	8.327	
c-2-Pentene	00627-20-3	10.28	1.70	17.465	
3,3-Dimethylpentane	00562-49-2	1.12	1.59	1.780	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	1.55	18.134	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.51	1.437	
c-2-Butene	00590-18-1	14.26	1.28	18.226	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.21	9.587	
2,2-Dimethylbutane	00075-83-2	1.11	1.09	1.212	
Ethylbenzene	00100-41-4	2.96	1.00	2.974	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.98	5.200	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.98	1.094	
2,4-Dimethylpentane	00108-08-7	1.46	0.77	1.119	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.74	0.780	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.69	3.848	
t-2-Hexene	04050-45-7	8.55	0.66	5.657	
2-Methylhexane	00591-76-4	1.09	0.65	0.708	
ortho-Xylene	00095-47-6	7.58	0.65	4.921	
2,3-Dimethylpentane	00565-59-3	1.25	0.65	0.807	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.58	0.938	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.56	0.611	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.53	6.212	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.50	6.248	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	0.50	2.861	

Vehicle 222b - Fuel 9 psi E0 - 3 Day Diurnal - Test 7696 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
1-Methylcyclopentene	00693-89-0	12.45	0.46	5.729	
c-1,3-Dimethylcyclohexane	00638-04-0	4.31	0.46	1.970	
4-Methyl-t-2-pentene	00674-76-0	8.04	0.45	3.652	
2-Methyl-2-pentene	00625-27-4	11.03	0.44	4.888	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.42	4.959	
c-2-Hexene & 3-MeCyclopentene	07688-21-3+01120-62-3	6.61	0.42	2.779	
n-Heptane	00142-82-5	0.97	0.41	0.392	
2,4-Dimethylhexane	00589-43-5	1.61	0.39	0.632	
2,2-Dimethylpentane	00590-35-2	1.04	0.37	0.382	
n-Octane	00111-65-9	0.80	0.32	0.253	
n-Undecane	01120-21-4	0.52	0.31	0.163	
n-Propylbenzene	00103-65-1	1.96	0.31	0.608	
Cyclopentene	00142-29-0	6.69	0.30	2.020	
t-1,2-Dimethylcyclopentane	00822-50-4	4.31	0.28	1.189	
3-Methylheptane	00589-81-1	1.12	0.27	0.305	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.24	2.867	
c-2-Heptene	06443-92-1	7.08	0.23	1.602	
2-Methylheptane	00592-27-8	0.97	0.21	0.205	
c-1,3-Dimethylcyclopentane	02532-58-3	4.31	0.20	0.845	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.18	0.585	
		Total	169.1	728.2	4.307
No MIR available, use weighted average of 4.3074					

Vehicle 222b - Fuel 7 psi E0 - 86°F Static - Test 7712					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Butane	00106-97-8	1.08	4.26	4.585	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	2.34	17.308	
2-Methylbutane (Isopentane)	00078-78-4	1.35	1.49	2.014	
Toluene	00108-88-3	3.93	1.04	4.064	
c-2-Butene	00590-18-1	14.26	0.83	11.892	
Cyclohexane	00110-82-7	1.14	0.70	0.794	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	0.59	4.567	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.50	2.637	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	0.43	0.518	
2,4-Dimethylhexane	00589-43-5	1.61	0.41	0.663	
3-Methylpentane	00096-14-0	1.69	0.39	0.653	
n-Pentane	00109-66-0	1.21	0.27	0.323	
2,4-Dimethylpentane	00108-08-7	1.46	0.25	0.358	
1,3,5-Trimethylbenzene	00108-67-8	11.75	0.24	2.801	
Methylcyclopentane	00096-37-7	2.05	0.21	0.434	
2-Methyl-2-butene	00513-35-9	14.20	0.21	2.918	
t-2-Hexene	04050-45-7	8.55	0.20	1.712	
n-Hexane	00110-54-3	1.13	0.18	0.199	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.12	0.660	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.11	0.103	
2,3-Dimethylbutane	00079-29-8	0.90	0.11	0.095	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	0.11	0.147	
Benzene	00071-43-2	0.69	0.08	0.053	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.03	0.093	
		Total	15.1	59.6	3.957

Vehicle 222b - Fuel 7 psi E0 - 105°F Static - Test 7715

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Benzene	00071-43-2	0.69	0.20	0.142	
2-Methylpropane	00075-28-5	1.18	0.97	1.141	
2,2-Dimethylbutane	00075-83-2	1.11	0.13	0.140	
2-Methylbutane (Isopentane)	00078-78-4	1.35	2.90	3.932	
2,3-Dimethylbutane	00079-29-8	0.90	0.26	0.234	
ortho-Xylene	00095-47-6	7.58	0.57	4.329	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	3.71	19.912	
3-Methylpentane	00096-14-0	1.69	0.20	0.333	
Ethylbenzene	00100-41-4	2.96	0.51	1.513	
n-Propylbenzene	00103-65-1	1.96	0.35	0.695	
n-Butane	00106-97-8	1.08	0.96	1.039	
2,4-Dimethylpentane	00108-08-7	1.46	0.19	0.271	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	2.35	18.237	
1,3,5-Trimethylbenzene	00108-67-8	11.75	1.40	16.495	
Methylcyclohexane	00108-87-2	1.56	0.35	0.537	
Toluene	00108-88-3	3.93	1.10	4.315	
n-Pentane	00109-66-0	1.21	0.70	0.850	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.22	2.538	
n-Hexane	00110-54-3	1.13	0.76	0.863	
Cyclohexane	00110-82-7	1.14	0.53	0.603	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.27	0.863	
n-Octane	00111-65-9	0.80	0.02	0.013	
Cyclopentene	00142-29-0	6.69	0.13	0.869	
n-Heptane	00142-82-5	0.97	0.22	0.210	
Indan	00496-11-7	3.23	0.67	2.176	
2-Methyl-2-butene	00513-35-9	14.20	0.09	1.216	
1,2,3-Trimethylbenzene	00526-73-8	11.94	0.63	7.531	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	0.32	0.390	
2-Methyl-1-butene	00563-46-2	6.38	0.17	1.093	
2,3-Dimethylpentane	00565-59-3	1.25	0.17	0.218	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.18	0.169	
2,4-Dimethylhexane	00589-43-5	1.61	0.03	0.050	
3-Methylheptane	00589-81-1	1.12	0.23	0.261	
c-2-Butene	00590-18-1	14.26	0.56	7.938	
2-Methylhexane	00591-76-4	1.09	0.04	0.040	
2-Methylheptane	00592-27-8	0.97	0.38	0.371	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.04	0.193	
1-Ethyl-2-Methylbenzene	00611-14-3	5.54	0.72	3.986	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.36	4.179	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	6.49	47.900	
1-Methyl-4-Ethylbenzene	00622-96-8	4.39	1.54	6.787	
t-2-Pentene	00646-04-8	10.47	0.01	0.112	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	0.51	0.713	
		Total	32.1	165.4	5.146

Vehicle 222b - Fuel 7 psi E0 - Dynamic - Test 25808

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	9.93	13.882	
Toluene	00108-88-3	3.93	8.56	33.605	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	5.80	6.951	
1-Methyl-3-Ethylbenzene	00620-14-4	7.39	4.33	32.008	
Cyclohexane	00110-82-7	1.14	3.63	4.126	
2-Methylbutane (Isopentane)	00078-78-4	1.35	3.11	4.212	
1-Butyne	00107-00-6	6.05	3.06	18.514	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	2.60	20.131	
2,3,5-Trimethylhexane	01069-53-0	1.12	2.41	2.694	
n-Hexane	00110-54-3	1.13	2.31	2.621	
2,3,4-Trimethylpentane	00565-75-3	0.95	1.47	1.393	
2,4-Dimethylpentane	00108-08-7	1.46	1.40	2.042	
3-Methylpentane	00096-14-0	1.69	1.36	2.300	
t-2-Pentene	00646-04-8	10.47	1.35	14.118	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	1.34	10.680	
n-Undecane	01120-21-4	0.52	1.29	0.673	
t-2-Hexene	04050-45-7	8.55	1.29	11.000	
Methylcyclopentane	00096-37-7	2.05	1.29	2.637	
n-Octane	00111-65-9	0.80	1.12	0.890	
n-Butane	00106-97-8	1.08	1.01	1.091	
2-Methylhexane	00591-76-4	1.09	0.95	1.028	
2,2-Dimethylpentane	00590-35-2	1.04	0.93	0.966	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.85	0.933	
2,4-Dimethylhexane	00589-43-5	1.61	0.82	1.315	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.80	1.281	
n-Heptane	00142-82-5	0.97	0.76	0.732	
2,3-Dimethylbutane	00079-29-8	0.90	0.76	0.679	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.75	2.405	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.74	0.783	
2-Methyl-1-butene	00563-46-2	6.38	0.70	4.438	
Benzene	00071-43-2	0.69	0.69	0.481	
2-Methyl-2-butene	00513-35-9	14.20	0.63	8.950	
Methylcyclohexane	00108-87-2	1.56	0.60	0.931	
c-2-Pentene	00627-20-3	10.28	0.59	6.036	
2,3-Dimethylpentane	00565-59-3	1.25	0.58	0.726	
Ethylbenzene	00100-41-4	2.96	0.52	1.536	
Unknown #22	.	3.12	0.12	0.382	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.10	1.227	
n-Pentane	00109-66-0	1.21	0.09	0.109	
		Total	70.6	220.5	3.122

No MIR available, use weighted average of 3.1224

Vehicle 222b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7742

Non Zero Mass Species Sorted By VOC

Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
Benzene	00071-43-2	0.69	1.57	1.088	
2,2-Dimethylbutane	00075-83-2	1.11	0.44	0.493	
2-Methylbutane (Isopentane)	00078-78-4	1.35	12.03	16.295	
2,3-Dimethylbutane	00079-29-8	0.90	3.59	3.228	
ortho-Xylene	00095-47-6	7.58	2.09	15.860	
1,2,4-TriMeBenz & t-Butylbenzene	00095-63-6+00098-06-6	5.37	1.46	7.829	
3-Methylpentane	00096-14-0	1.69	5.15	8.704	
Methylcyclopentane	00096-37-7	2.05	1.42	2.904	
n-Butane	00106-97-8	1.08	7.14	7.694	
2,4-Dimethylpentane	00108-08-7	1.46	0.64	0.930	
meta- & para-Xylenes	00108-38-3+00106-42-3	7.76	4.62	35.806	
Methylcyclohexane	00108-87-2	1.56	2.36	3.667	
Toluene	00108-88-3	3.93	5.87	23.052	
n-Pentane	00109-66-0	1.21	2.14	2.598	
1-Pentene & 2-Butyne	00109-67-1+00503-17-3	11.70	0.24	2.782	
n-Hexane	00110-54-3	1.13	6.58	7.464	
Cyclohexane	00110-82-7	1.14	5.00	5.691	
Cyclohexene & 3-Methylhexane	00110-83-8+00589-34-4	3.19	0.49	1.552	
n-Octane	00111-65-9	0.80	0.45	0.362	
n-Nonane	00111-84-2	0.68	0.76	0.518	
2-Methylpropene & 1-Butene	00115-11-7+00106-98-9	7.94	0.94	7.476	
n-Decane	00124-18-5	0.59	0.70	0.414	
Cyclopentene	00142-29-0	6.69	0.35	2.337	
n-Heptane	00142-82-5	0.97	0.04	0.037	
2-Methyl-2-butene	00513-35-9	14.20	1.57	22.225	
2,2,4-TriMePentane (IsoOctane)	00540-84-1	1.20	1.94	2.329	
2-Methyl-1-butene	00563-46-2	6.38	0.63	4.037	
2,3-Dimethylpentane	00565-59-3	1.25	0.22	0.279	
2,3,4-Trimethylpentane	00565-75-3	0.95	0.64	0.611	
2,3-DiMeHexane & 2,3-MeEtPentane	00584-94-1+	1.09	0.37	0.400	
2,4-Dimethylhexane	00589-43-5	1.61	0.30	0.487	
c-2-Butene	00590-18-1	14.26	1.14	16.253	
2-Methylhexane	00591-76-4	1.09	0.34	0.364	
2,5-DiMeHexane & EtCyPentane	00592-13-2+01640-89-7	1.61	0.02	0.031	
2-Methyl-1-pentene & 1-Hexene	00592-41-6+00763-29-1	5.30	0.56	2.968	
3-Methyl-t-2-pentene	00616-12-6	11.66	0.59	6.832	
t-2-Butene	00624-64-6	15.20	1.18	17.923	
2-Methyl-2-pentene	00625-27-4	11.03	0.40	4.405	
c-2-Pentene	00627-20-3	10.28	0.48	4.932	
t-2-Pentene	00646-04-8	10.47	1.09	11.444	
3 & 4-Methyl-1-Pentenes	00691-37-2+00760-20-3	5.78	0.69	4.003	
2-MePentane & 4-Me-c-2-Pentene	00691-38-3+00107-83-5	1.40	8.95	12.511	
3-Methyl-c-2-pentene	00922-62-3	12.52	0.48	6.045	
2,3,5-Trimethylhexane	01069-53-0	1.12	0.73	0.818	

Vehicle 222b - Fuel 7 psi E0 - 3 Day Diurnal - Test 7742 continued					
Non Zero Mass Species Sorted By VOC					
Species	CAS No.	MIR	Composite VOC mg	Ozone mg	
n-Undecane	01120-21-4	0.52	2.40	1.255	
2,2,5-Trimethylhexane	03522-94-9	1.05	0.45	0.470	
t-2-Hexene	04050-45-7	8.55	0.82	6.991	
		Total	92.1	286.4	3.111